

The Canowindra Age of Fishes Project:

Birth of a Museum

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A sub-thesis submitted in partial fulfilment of the requirements for the degree of Master of Science (Scientific Communication) of The Australian National University

February 2001

Statement of Originality

This sub-thesis is entirely original and all sources have been acknowledged.

The study has been based on the objective analysis of data collected from survey respondents and from input by key stakeholders. The statements made do not necessarily reflect the personal opinions of the author.



Christine Finch

February 2001

Abstract

In 1993, following an earlier discovery in 1956, a significant fossil find was unearthed ten kilometres from the small country town of Canowindra in New South Wales. The discovery, made by Dr Alex Ritchie of the Australian Museum, was that of an ancient billabong containing several thousand fossilised fishes. These fishes, including several species never seen before, had been killed in a drought during the Devonian period, some 360 million years ago.

The Canowindra fossils rank as one of the world's most important finds in terms of quantity and quality of fossil material. It was agreed that the fossils should remain in Canowindra where they would form the basis of an Age of Fishes Museum.

The objectives of this study were to document the events leading up to the establishment of the Museum, the scientific significance of the find, and the opinions and involvement of the various stakeholders in the project. The study also examined the question 'What makes a good museum?' and considered the success of the Age of Fishes Museum in terms of progress made to date.

The information was obtained by means of a written questionnaire, supplemented by interviews with six key stakeholders. Survey respondents were generally satisfied with the Museum, and found it informative and educational. However the stakeholders interviewed had extremely divergent views on the Museum's progress, with the most vocal criticism being about management issues, and a perceived lack of strategic and business direction. It is too early to gauge the general public's reaction, as the Museum is not due to be officially opened until April 2001.

Several recommendations have been identified as a result of this study. These include the urgent finalisation of management and policy documents, the establishment of documented goals, the identification of the target audience, and the need for all stakeholders to work towards a common mission that is agreeable to all parties.

Acknowledgments

Thank you to:

- the stakeholders who kindly gave up their time to speak to me;
- Dr Sharyn Errington and Dr Tony Oldfield (Centre for the Public Awareness of Science) for their advice with this study;
- Ms Bronwyn Reed (Age of Fishes Museum) for providing me with information and keeping me informed of the Museum’s progress; and
- My family, for their patience, feedback and technical assistance with database issues and the desk topping and proofing of this document.

Table of Contents

Statement of Originality	
Abstract	
Acknowledgments	
Introduction	1
1.1 Background	2
1.2 Purpose	5
1.3 Rationale.....	5
1.4 Research questions	7
Chapter 2: Literature Review	9
2.1 The museum experience	10
2.1.1 Why do people go to museums?.....	11
2.1.2 The interactive experience model.....	12
2.2 Museums as places for learning	13
2.2.1 Adult education.....	13
2.2.2 School groups	14
2.2.3 The museum as a communicator	15
2.3 What makes a successful museum?	16
2.3.1 Clearly defined aims and achievable outcomes.....	17
2.3.2 A satisfied audience	19
2.3.3 Good management and administration	21
2.3.4 Sound financial and community support	23
Chapter 3: Methodology.....	25
3.1 Data collection.....	26
3.1.1 Written questionnaire.....	26
3.1.2 Oral history	27
3.2 Selecting the interviewees	29
3.3 Data analysis.....	30
Chapter 4: Results and Discussion	32
4.1 Historical perspective	33
4.1.1 How it all began.....	34
4.1.2 History re-told.....	36
4.2 Local perspective.....	38
4.2.1 The volunteer contingent	38
4.2.2 Local business opportunity	41
4.3 Scientific perspective	46
4.3.1 The fish fauna of Canowindra	47
4.3.2 Management of fossils sites in New South Wales.....	51
4.3.3 Science communication	53
4.4 Tourism perspective	54
4.4.1 Local and regional attractions.....	54
4.4.2 Regional tourism demographics	56
4.4.3 Tourism as a regional development strategy	57

4.4.4 Matrix ecotourism.....	59
4.4.5 Visitors to the Age of Fishes Museum	62
4.5 Educational perspective.....	65
4.5.1 Targeting schools.....	66
4.5.2 Catering for adults	69
4.5.3 Interactivity.....	71
4.5.4 A knowledge centre for scientists.....	71
4.6 Management and planning perspective	72
4.6.1 Mission and objectives	73
4.6.2 Current management.....	74
4.6.3 Grants and sponsorship.....	77
4.6.4 Future vision	79
4.7 Comparative fossil centres	83
4.7.1 World Heritage Convention as it applies to fossil sites.....	83
4.7.2 Riversleigh Interpretive Centre, Queensland.....	85
4.7.3 Parc de Miguasha, Canada.....	88
Chapter 5: Summary and Conclusions	94
5.1 Success of the Age of Fishes Museum	95
5.2 Limitations of the study	97
5.3 Recommendations.....	98
References	101
Appendices	107
A. Questionnaire	
B. Complete oral history transcript (Bruce Loomes)	
C. Canowindra fishes	
D. Press clippings	

List of Figures

Figure 1: Map of Canowindra and regional tourist attractions.....	2
Figure 2: The Premier of NSW, Mr Bob Carr, and the Mayor of Cabonne, Mr John Farr at the Building Dedication Ceremony for the Age of Fishes Museum	4
Figure 3: Flow-chart showing activities involved in planning, designing and producing exhibitions	16
Figure 4: The relationship of museum policies underpinned by guidelines.....	18
Figure 5: First year that survey respondents became involved in the Age of Fishes Museum project	33
Figure 6: Dr Alex Ritchie excavating the fossil site upon its rediscovery in 1993	35
Figure 7: Official opening of the Age of Fishes Museum shop by the Chairman of the Board, Mr Ron Cain.....	45
Figure 8: <i>Bothriolepis yeungae</i> , one of the common armoured fish discovered at Canowindra	49
Figure 9: Visitor information sign outside Age of Fishes Museum	55
Figure 10: Number of visitors to the Age of Fishes Museum	63
Figure 11: Projected figures for visitor numbers and revenue raised by the Museum.....	63
Figure 12: Number of students who have visited the Age of Fishes Museum	67
Figure 13: Fish sculpture created by students at Canowindra High School for the Museum.....	69
Figure 14: The current plan for the future development of the Age of Fishes Museum	79
Figure 15: Part of the Museum display, showing live fish	81
Figure 16: Map indicating location of Riversleigh and Naracoorte	85
Figure 17: Part of the display at Riversleigh Interpretive Centre.....	87
Figure 18: Mr Bruce Loomes of Canowindra and Dr Marius Arsenault at the unveiling of the plaque to celebrate the Parc de Miguasha's World Heritage Listing	91

Chapter 1:

Introduction



Chapter 1: Introduction

1.1 Background

Canowindra is a small country town located in the Cabonne Shire Council in the Central West of New South Wales. It has a population of just under 1,700 people, and is approximately 350km (4 1/2 hours) west of Sydney. It is close to the towns of Cowra, Orange and Bathurst, and within touring distance of the Cowra Japanese Gardens and War Cemetery, the Parkes Radio Telescope, the Wellington Caves, the Western Plains Zoo at Dubbo, and many other important regional tourist attractions.



Figure 1: Map of Canowindra and regional tourist attractions

Canowindra’s rich history includes visits by the bushranger Ben Hall and extensive goldmining, but its fortunes have been mostly dependent on farming. The town prospered in the 1960s and 1970s when farm produce was booming, but in the mid-1980s the region’s economy slumped due to drought and falling prices, and many young people moved to larger towns or cities to try to earn a living (Yeung, Stephenson & Ritchie, 1997).

In 1988 Canowindra became the ‘Ballooning Capital of Australia’ as a result of its inaugural balloon festival, now celebrated annually each April as Marti’s Fiesta. More recently, Canowindra has also begun to earn a growing reputation for its regional wines. The natural environment also attracts anglers, bushwalkers and four wheel drive owners.

However a significant fossil find in 1993 put the small township on the map in terms of scientific interest. The find involved some 3,700 perfectly preserved fossilised fishes, dating back to the Devonian period 360 million years ago. This geological period has been coined 'The Age of Fishes', as it was a time when fishes became diversified, dominating the aquatic environment and giving rise to the first terrestrial vertebrates (Cloutier & Lelievre, 1998).

'The Age of Fishes Museum project' referred to in this thesis is the name given to a range of activities and events relating to the excavation and promotion of this important palaeontological find.

Because of the sheer scale of the 1993 discovery, it was decided that the fossils should remain in Canowindra to form the basis of a unique museum illustrating the remarkable story of the Age of Fishes. The large volume of rock excavated required significant storage space, and so the majority of the slabs remain in storage beneath the grandstand at the Canowindra showground. Moreover, the underlying fossil layer, also covered with the impressions of fossil fishes, has been reburied until such time as it can be properly excavated and roofed to form a unique on-site exhibit.

From 1993 to 1998 a temporary display was housed at the Age of Fishes Museum Research and Learning Centre in the old Courthouse at Canowindra. Volunteers presented talks on the discovery, and visitors were encouraged to view, touch and learn about these ancient fish.

In 1998 the makeshift display at the courthouse was transferred to a new, purpose-built Age of Fishes Museum (AOFM), located in Gaskill Street, Canowindra. Volunteer staff are still largely responsible for conducting tours and some administrative duties.

The Museum building was officially dedicated by the New South Wales Premier, Mr Bob Carr, in February 1999 (*The Grossi Age*, June 1999). Both the Premier and the Federal Tourism Minister, Ms Jackie Kelly, praised the Museum project, as recorded in the Canowindra News of 10 February 1999 (**Appendix D-1**). In performing the dedication ceremony Mr Carr said that the Museum would be a world-class facility when completed and would attract visitors from throughout Australia and from overseas.



Figure 2: The Premier of NSW, Mr Bob Carr, and the Mayor of Cabonne, Mr John Farr at the Building Dedication Ceremony for the Age of Fishes Museum.

The official opening of the Museum was to have taken place in 2000, but has now been postponed until April 2001.

Although there are many sites of geological importance in New South Wales, the Canowindra site is considered to be of major significance for a number of reasons:

- It represents a mass mortality event of a single population of fishes.
- Several of the fishes preserved there were new to science.
- The volume of fossils is vast, consisting of literally thousands of fishes concentrated into an area covering more than 900 square metres (only part of the deposit has been excavated).
- The quality of fossil preservation is first-rate.
- The find includes superb specimens of new lobe-finned fishes (sarcopterygians), the group from which the first tetrapods (amphibians) evolved (Cribb, 1996; Cloutier & Lelievre, 1998).

There has been a dedicated band of supporters for the project since the initial discovery of the site, predominantly made up of some Canowindra townsfolk who are fiercely proud of their fossils. They have formed a Board called the Age of Fishes Museum Association Inc.,

and, together with the Australian Museum and the Cabonne Shire Council, are responsible for the overall management and development of the Museum.

The Australian Museum, through Dr Alex Ritchie, has been heavily involved in creating the initial vision for the Age of Fishes Museum, scientifically describing the specimens, and producing the displays. The ecotourism company *Gondwana Dreaming* (see Section 4.4.4) has been involved in bringing in paying volunteers to work alongside the scientists to prepare and cast the fossil specimens for scientific study. Local, State and Federal governments have been instrumental in providing financial assistance to the project.

1.2 Purpose

The purpose of this study was two-fold. The first and primary aim was to record the history leading up to the birth of the Age of Fishes Museum in Canowindra. The second was to document how the various stakeholders view the success of the Museum to date. The study did *not* attempt to gauge the reaction of the general public, given that the Museum has not yet been officially opened.

1.3 Rationale

It was envisaged at the outset of this study that its timing would coincide with the opening of the Museum, and might provide an important historical report documenting the efforts of those involved in the project. It has achieved this by interviewing a range of stakeholders who have had a key role in getting the project to where it is today.

As the Museum opening has been delayed due to a number of issues, it also seemed appropriate to investigate some of the difficulties the project has encountered. For this reason, the scope of the project also briefly looks at the Canowindra site in comparison with two other small regional fossil museums, namely Riversleigh, located in Queensland, Australia, and the Parc de Miguasha, located in Quebec, Canada.

Although not of comparable geological age, the Riversleigh site was chosen because of recent press reports highlighting difficulties in terms of management, funding and government involvement. It was also suggested by one of the respondents to the survey

component of this study that Canowindra should be considered as New South Wales' 'Riversleigh', a concept that is explored through this comparison.

The Parc de Miguasha, on the other hand, is of comparable geological age, and could serve as a potential model for Canowindra as discussed in *Chapter 4: Results and Discussion*.

The different perspectives that have been considered in this study are as follows:

- An historical perspective, reviewing events from the initial discovery of the first fossil slab in 1956 through to the present day.
- A local perspective, looking at the effects of the discovery on the lives of the townsfolk. The enormous dedication by the local volunteer contingent is recognised, and the effect on local business is examined.
- A scientific perspective, including the palaeontological significance of the site. A summary of the scientific finds to date is provided, and the importance of formal identification, preservation and interpretation of specimens is discussed.
- A tourism perspective, examining the emerging trend in rural ecotourism as a survival mechanism for country towns, and the concept of matrix ecotourism (see Section 4.4.4). Visitor profiles of the Canowindra region are also examined.
- An educational perspective, considering the effectiveness of the Museum in generating interest with both school programs as well as the general public.
- A management and planning perspective, examining the role of the Age of Fishes Museum Board, Cabonne Council and the Australian Museum. The future vision for the project is also discussed.
- A 'big picture' perspective, looking beyond Canowindra to the achievements of two other significant fossil sites (one in Australia, and one overseas) that are promoting their finds through the establishment of regional interpretative centres.

1.4 Research questions

From an analysis of the available historical and management information relating specifically to the Age of Fishes Museum project, in conjunction with a review of relevant references on museum theory and practice examined in *Chapter 2: Literature Review*, the following research questions have been identified:

- What makes a successful museum?
- Is the Canowindra Age of Fishes Museum successfully promoting public awareness of its fossils? and
- How do the various stakeholders view the success of the Museum to date?

In order to investigate these questions, data was collected both qualitatively and quantitatively, and this is discussed in *Chapter 3: Methodology*. This was done initially through a short written questionnaire (**Appendix A**), despatched with the July 2000 edition of the Museum's newsletter, *The Grossi Age*. The questionnaire was used to obtain an overview of stakeholder involvement in the Age of Fishes project, and to explore their feelings about the success of the Museum to date.

The questionnaire was then followed up by one-on-one interviews with several of the respondents and key stakeholders as a way of gathering further, more detailed information about their role in the project, as well as their individual views.

Chapter 4: Results and Discussion considers the 41 survey responses that were received. It looks at the breakdown of respondents by demographic details, as well as by their particular involvement in the project. The respondents' answers to the free-text questions often gave particularly valuable insight into their perceptions of the fossils, the tourism activities around them, the development of the Museum's displays and the management of the entire process from a business perspective.

The views of the individual stakeholders interviewed are also reported under *Chapter 4: Results and Discussion*, in the form of short vignettes of information. Local business people, volunteers, tourists, scientists, Museum staff, tour operators and local government each had

their own distinctive views on the success of the venture, and these have been quoted in the various sub-sections of this chapter.

Finally, in *Chapter 5: Summary and Conclusions*, the research questions are answered and the limitations of the study are discussed. The success of the Age of Fishes Museum is also considered in the light of relevant literature on museum management, and recommendations are made in line with issues raised by both stakeholders and survey respondents.

Chapter 2:

Literature Review



Chapter 2: Literature Review

The following is a summary of the published literature reviewed in relation to various aspects of museum theory and management, including tourism and educational issues. In particular, it examines information provided in the literature on 'What makes a good museum.'

2.1 The museum experience

There are currently many different types of museums, all serving a variety of community needs. The International Council of Museums, an agency of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines a museum as:

'a non profit making, permanent institution, in the service of a society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for the purposes of study, education and enjoyment, material evidence of man and his environment' (Museums Australia, 1994, p.6).

Museums have expanded in variety, changed their role and increased in popularity over recent times (Falk & Dierking, 1992). While they used to be primarily focussed toward collections and research, now they are also being viewed as both institutions for public learning, as well as an integral part of the world of leisure and tourism (Hooper-Greenhill, 1994).

In recent times, formal education has emphasised coursework over exams, and first-hand experiences, such as visiting museums, over rote learning in the classroom. This has had the effect of making educational processes closer to other social processes such as leisure. Learners no longer think that they must suffer to learn, or that learning has to be difficult to be effective (Hooper-Greenhill, 1994).

We learn while we are involved, committed and enjoying ourselves or, as expressed by Bruner (in Curzon, 1985, p.53), 'Discovery is in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence so reassembled to additional new insights'.

2.1.1 Why do people go to museums?

What makes one person choose to visit a museum in their leisure time and another not? It would appear that the outcome of whether they visit depends on whether their personal and social interests and desires match the anticipated physical context and the associated activities of a museum. There are six major criteria by which individuals judge leisure activities:

1. Being with people, or social interaction;
2. Doing something worthwhile;
3. Feeling comfortable and at ease in one's surroundings;
4. Having a challenge of new experiences;
5. Having an opportunity to learn; and
6. Participating actively (Falk & Dierking, 1992, p.16).

In selecting a leisure-time activity, people normally look for something that involves a subset of these criteria. Frequent museum visitors tend to consider opportunities to learn, the challenge of new experiences and doing something worthwhile as being the three most important attributes. Interestingly, this group makes up only a relatively small proportion of the general population. On the other hand, people who tend not to visit museums rank being with people, participating actively and feeling at ease in their surroundings as being the more important criteria (Falk & Dierking, 1992).

While an individual's attitude to the museum is derived partially from their leisure requirements, it is also derived from their past experiences and general life needs. In fact, 'psychographic' variables such as these may even be more important than demographic variables in explaining museum visiting or non-visiting (Merriman, 1993).

2.1.2 The interactive experience model

The museum visit can be conceptualised as involving an interaction between the following three contexts:

1. The personal context;
2. The social context; and
3. The physical context (Falk & Dierking, 1992).

Each museum visitor's personal context is unique, and incorporates a variety of experiences and knowledge. However, visits to museums also occur within a social context as most people visit in a group, and those who do visit alone may well interact with other visitors and museum staff.

Understanding the social context provides an explanation of variations in behaviour between different social groups, such as adult groups, family groups, or children on school field trips. This, in turn, can strongly affect the visitor's physical context – the pathways taken in the museum, as well as the exhibits and objects seen. For example, the social interactions of a large group of school children attending on an educational visit have been shown to differ from those of the children in a family group, who are attending for leisure purposes (Falk & Dierking, 1992).

The physical context also contributes to the individual's museum experience. Even though this context includes a multitude of events or features, it is generally assumed that the exhibits themselves, and the objects and labels in particular, have the greatest influence on the visitor's museum experience. Interactive exhibits are generally regarded as being the most popular type of exhibit, especially among younger respondents, while older people tend to prefer static exhibits (Hooper-Greenhill, 1994).

It is important to remember that visitors generally have a functional rather than an intellectual perception of the museum, and as such they see the museum through the eyes of a user, rather than as a planner or an insider (Hooper-Greenhill, 1994).

2.2 Museums as places for learning

Learning can be defined as the modification of a person's behaviour through their activities and experiences so that their knowledge, skills and attitudes are changed (Curzon, 1985).

Learning by museum visitors is a less structured process than occurs in the more formal school setting. The presentation is much more passive, the audience has a wider age range and educational background, and the visitors have a greater variety of motives for being there (Falk & Dierking, 1992). Nevertheless, they are excellent environments for meaningful learning because they offer rich, multi-sensory experiences that can often lead the visitor to awareness and understanding.

Although some museum visitors may remember specific information or content, they do not catalogue their memories in an academic manner. Rather, they assimilate events and observations into mental categories of personal significance, as determined by events in their social lives before and after the museum visit. This type of learning is not the same as acquiring or recalling information, but rather reflects a number of other kinds of learning such as social, spatial, conceptual and aesthetic learning (Ferguson, 1997). It is certainly considered to be *meaningful learning*, as it links new information to existing concepts and principles within the visitor's existing knowledge structure, reinforcing or changing what they already know.

2.2.1 Adult education

Adult learning is a continuing, self-directed process of developing personal, professional and social roles. It is difficult to measure learning outcomes of adult visitors in museums as, in the informal learning setting provided, there may be many unanticipated outcomes resulting from the freedom of the visitor to self-select their own experience. Museums can be seen as establishments offering both learning *and* enjoyment. Their goal is not to indoctrinate visitors, but rather to encourage them to stay at the exhibits longer, learn more, and return to the museum frequently throughout their lifetimes (Hooper-Greenhill, 1994).

Brennan (1997) suggests that the concept of self-directed learning might be an appropriate way of defining adult visitor behaviour in museums. He suggests that the emphasis should be

on *how* the adult learns, rather than what they learn (as emphasised by an outcomes approach) or who they are (as emphasised by a demographic approach). This framework allows for judgements about the degree to which self-evident learning behaviour is evident, and the ways in which adults are using the resources of the museum for their own learning.

To maximise the learning potential of a visit to a museum, the museum needs to understand how adults perceive they have learned. Research by Farrell (1998) indicates that adults who visited museums did perceive that they learned, but that science information, rather than more in-depth science principles or concepts, was most often cited as the learning that occurred.

It is interesting to note that leisure research forecasts indicate a move away from a culture dominated by youth towards a culture dominated by the over-fifties (Hooper-Greenhill, 1994). Theories of adult learning indicate that at this stage in their lives, people are inclined to enjoy more thoughtful pursuits such as offered by museums.

On the other hand, many parents spend their leisure time with their children, and see the museum as an enjoyable and instructive venue, and one that offers a social experience for the whole family (Hooper-Greenhill, 1994). The needs of all these groups should be taken into account in museum planning.

2.2.2 School groups

Museums are extremely valuable teaching resources. The museum visit, like any excursion, is an opportunity to be out of the classroom, to see and experience an environment and objects not readily available in schools, and to share with and learn from people who are not their regular teachers (Robins, 1995). Going to a new place, meeting new people, experiencing new approaches to gathering information, and encountering new material can be very stimulating and motivating, and helps to put the knowledge that students have gained at school into a broader perspective (Hooper-Greenhill, 1991).

One example of a very successful hands-on education centre that has responded to teachers' needs has been the *Fossils* program that has been introduced at the Science Centre of the Manawatu Museum and Art Gallery in New Zealand.

The program was developed as a response to concerns raised by primary school teachers that they lacked the skills and resources to adequately cover the *Making Sense of Planet Earth and Beyond* strand of the National Science curriculum (Gardner, 2001).

The two-hour program starts with students viewing and handling fossil specimens. The students then experience a series of hands-on activities, including turning loose sediments and shell into a fossil-rock using equipment based on a car jack, and excavating replica fossils out of sand trays. The fossils are extracted, cleaned, drawn, identified and interpreted. This is followed by an excursion to a local fossil-rich site, where the students are given the opportunity to discover, extract and identify real fossils from the mudstone. Finally, the session concludes with an interpretation of the site, together with speculation on what it would have been like a million years ago.

The program's success has been due to a number of factors including its relevance to the school science curriculum, the fact that it is hands-on using resources not often available in schools, and its integration of social skills and critical thinking into its activities. Having a knowledgeable and enthusiastic museum educator to take the class also has the dual benefit of freeing up the teachers' time so that they can spend more time with individual students, as well as picking up ideas and expanding their own knowledge.

2.2.3 The museum as a communicator

Many museums have no understanding of the nature of the communication process, which can be defined as the achievement of meaning and understanding between people in order to affect behaviour and achieve desired outcomes (Curzon, 1985). For successful communication to occur, both the sender *and* the receiver of the message must share the same concepts and passions. The museum must find ways of arousing and instilling passions and exploring ideas that people will find enlightening, using both its collections, and the curiosity and experience of the visitors (Hooper-Greenhill, 1994).

Contrary to the practice of many museums, communication is not a linear 'hypodermic' process, where the museum 'injects' the visitor with ideas. This model assumes that people are passive and reactive, and does not acknowledge that they actively interpret their museum experience in the light of many individual and social factors. Unfortunately this linear model

of communication is often reflected in the linear process of making exhibitions (Hooper-Greenhill, 1994).

In this model curators, as exhibition generators, play the role of powerbroker, defining the content and the message according to their own point of view. The absence of feedback from visitors during the developmental stage means that any improvement is based on trial and error. A preferable approach is to make the audience more inclusive in the communication process, and to conduct extensive research at all stages of the process - market research before the process began, trialing of exhibits during production and evaluation of displays after the exhibition opens (Miles, 1985).

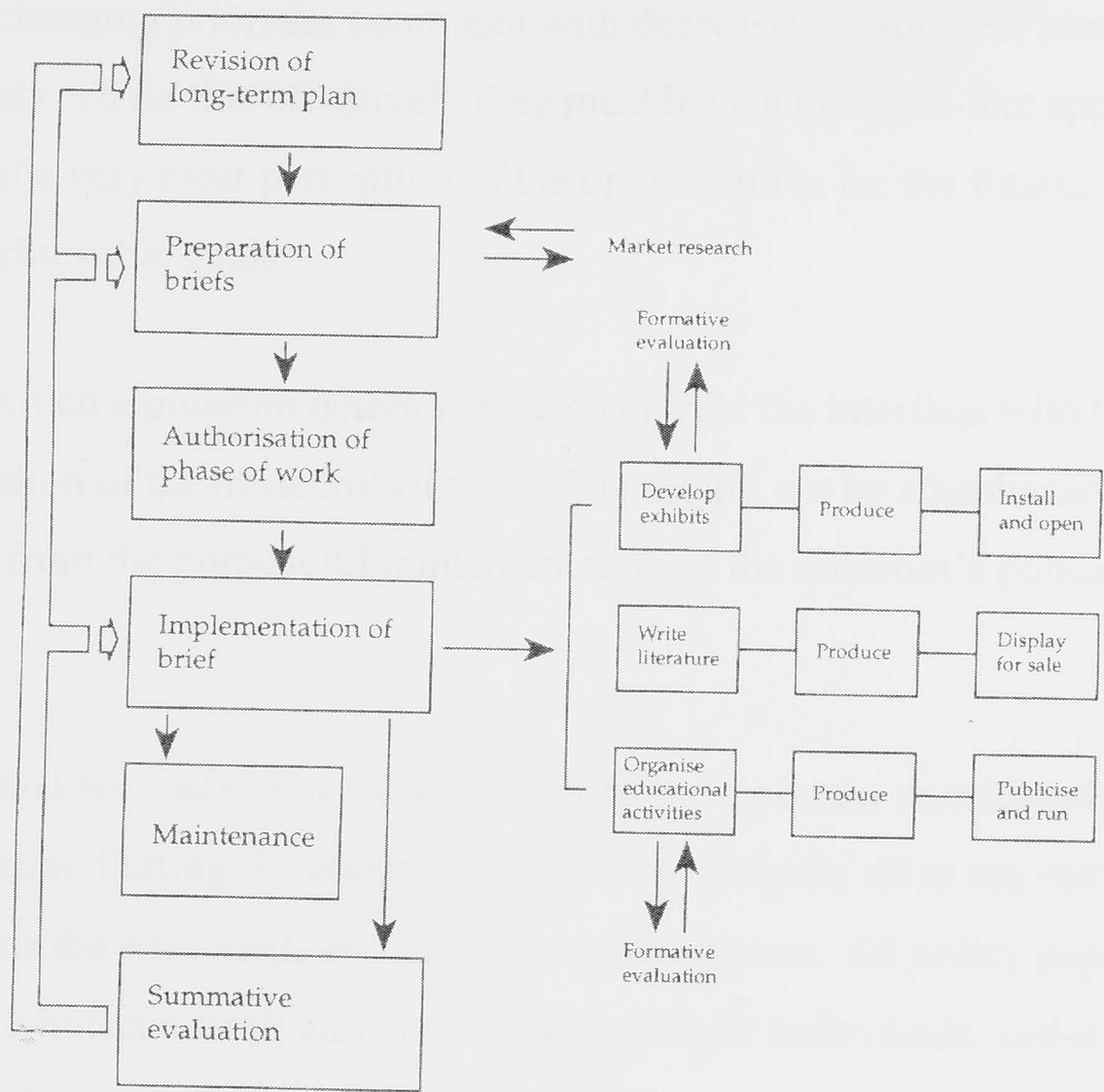


Figure 3: Flow-chart showing activities involved in planning, designing and producing exhibitions, from Miles (1985).

2.3 What makes a successful museum?

For a museum to be successful it needs to be sociable, interactive or entertaining, as well as informative and educational. But as well as a worthwhile product, it also needs to have good management, sound strategic, marketing and business plans and both financial and community support (Robins, 1995).

For these reasons, important questions must be asked before any museum is established.

These include:

- What is the aim of establishing a museum?
- Who will be the audience?
- What management and administrative procedures need to be put in place?
- How will it be funded?
- What political considerations need to be taken into account?

2.3.1 Clearly defined aims and achievable outcomes

In a climate of changing priorities combined with decreasing resources, museums must compete for funds. To do this effectively they must have a business-like approach to management and a very clear perception of the opportunities for the future, including clearly identified and achievable goals.

The manner in which a museum determines and controls the interface with the public will result in the creation of the museum's image. This should not be a haphazard occurrence, but should emanate from the purposeful implementation of the museum's policies (Belcher, 1991).

Clearly defined and well-advertised aims are the most important consideration required of a developing museum. Putting the museum's aims in writing for all to see clarifies its functions, lightens the workload, and helps resolve problems. All policy papers should be accessible to both museum staff and outside agencies and individuals, and should seek to clarify the whole basis upon which the museum undertakes its activities (Hooper-Greenhill, 1994; Robins, 1995).

The first step in this process is to develop an effective *mission statement* that will strategically focus all of the museum's activities. The mission statement should outline the overall scope of the museum, including what it wants to do and for whom it wants to do it. The logistics of implementing the mission statement should be contained in the *corporate* or *business* plan that sets out what can reasonably be achieved over a given period of perhaps three to five years (Belcher, 1991).

Policy formulation should not be introspective but should involve wide consultation. It should provide the starting point for all management planning, and be followed by separate objectives that detail how the mission statement is to be achieved (Belcher, 1991; McLean, 1997). Each objective should be broken down into a set of targets, to which are attached a time scale, cost, and performance measures, set for each objective as a way of tracking progress of achievement. Once formulated, these should be communicated to all employees and stakeholders and should form the baseline for all activities.

Short-term achievable objectives should lead to regular results that will provide a feeling of satisfaction with progress, rather than the frustration that can be generated by long-term problems. They also allow the interest of workers and of the visiting public to be maintained, while at the same time allowing continuing improvement of the collections, their interpretation and display (Robins, 1995).

‘Communications’ should be one of the first subjects to be addressed in the museum’s policy document. It should set out the museum’s general principles and rationale of its work in this area and lead to the development of a communications *strategy* outlining the organisational aspects of implementing the policy.

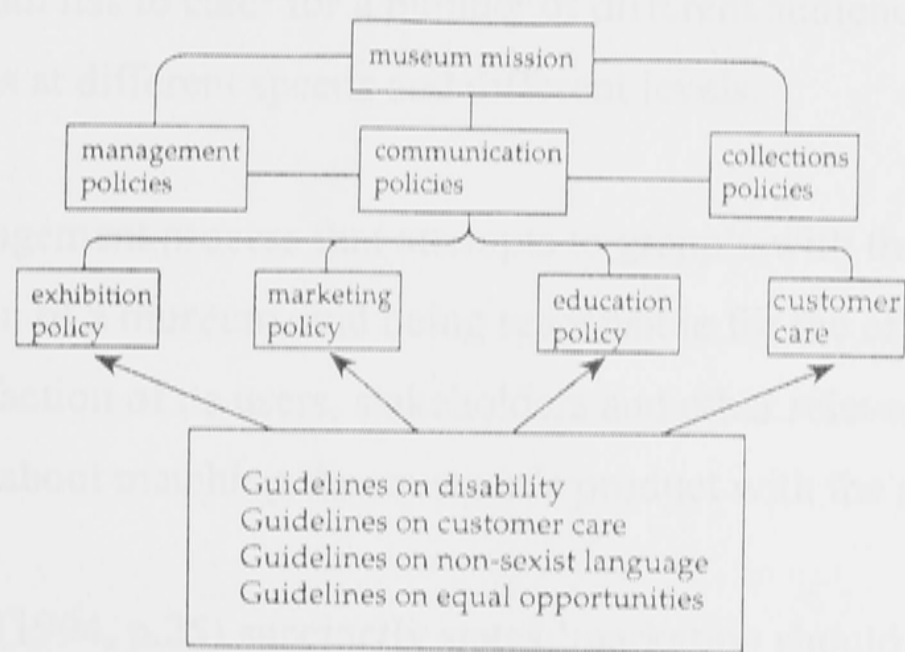


Figure 4: The relationship of museum policies underpinned by guidelines, from Hooper-Greenhill, 1994.

The museum's exhibition policy should then form a subdivision of the communications policy. In a market-led institution the needs and preferences of the customers will have considerable influence on exhibition policy. However, most exhibition makers think too much about the content and presentation of their exhibition, and too little about their intended audience. Indeed, Vergo (1993) suggests that most exhibition makers would be hard-put to define their audience at all. This is of particular concern in the light of the comment that 'even a museum which is not overtly responding to customer demands would nevertheless be prudent to take note of visitors' views, lest it find itself without any' (Belcher 1991, p.74).

2.3.2 A satisfied audience

Many museums suffer from the image of the museum as 'worthy but dull'. In order to survive, the museum must overturn this image and present itself as 'worthy and fun'. The 'educational' connotation is also off-putting for those who were not successful at school (Hooper-Greenhill, 1994). In order to overcome these prejudices, the museum needs to enhance its public image, identify its target audience, and promote itself through the media.

The expectations and levels of prior knowledge and experience that visitors bring with them to the museum are many and varied. Unfortunately there is no such thing as 'the typical visitor' and the museum has to cater for a number of different audiences who want to learn and do different things at different speeds and different levels.

Marketing is the management process that attempts to grapple with these concerns, both confirming the mission of a museum, and being responsible for the efficient identification, anticipation and satisfaction of its users, stakeholders and other relevant constituencies (McLean, 1997). It is about matching the museum's product with the market.

As Hooper-Greenhill (1994, p.25) succinctly states 'marketing should be concerned with gathering information on perceptions of the museum and its work, relaying this information to colleagues, working as a team to decide on promotional policies and developing and implementing promotional strategies'.

To be successful, a museum needs to offer the public a product that they want. It is possible that what is deeply interesting to the organisers may not necessarily interest the bulk of the potential visitors (Robins, 1995; McLean, 1997). Moreover, there are a plethora of alternative activities to occupy the minds and time of the public, and they may feel that the museum is not relevant to them, or they may not even be aware of its existence.

Lovelock & Weinberg (1998) have identified the following as indicating that a museum is being expert-driven, rather than consumer-driven:

- Managers and board members are so enamoured of their museum that they believe that this must be what the public needs.
- Marketing activities tend to centre on stimulating awareness through advertising and publicity.
- When people fail to respond to the organisation's offerings, this disinterest is ascribed to ignorance or inertia, rather than to shortcomings in the offerings.
- Little or no use is made of marketing research, and such research as is conducted fails to assess the needs and concerns of people whom the organisation is trying to serve.
- Findings that conflict with management beliefs tend to be ignored.
- Distinction in market segments are ignored or played down in preference to development of 'one best strategy' to suit everyone.

Many museum staff mistakenly think that promotional work and marketing are the same thing, but this is not so. A publicity approach transmits information about what is happening, when and where. However a marketing approach tries to link the museum's offerings to the intended target audiences, and asks questions about how appropriate the 'product' is for the 'consumer'. Visitor research is an essential management information tool. It should include both qualitative and quantitative research, and be carried out as part of a systematic and planned program (Belcher, 1991; Hooper-Greenhill, 1994).

A satisfied audience can often be judged by the extent to which their word of mouth attracts other visitors to the museum. Word of mouth has been found to be seven times more effective than newspapers and magazines, four times more effective than personal selling,

and twice as effective as radio advertising (Falk & Dierking, 1992). Because word of mouth information comes from individuals with first-hand experience, but without a vested interest in what they are recommending, it is generally accepted as being more credible, socially valid, and authentic than other forms of advertising.

However just as word of mouth can have a positive effect on visitor numbers, dissatisfied customers can equally have a negative effect on attendance rates. One of the biggest mistakes made by most museums is in opening their doors too early (Robins, 1995). Today's visitor, conditioned by television and big store displays, demands quality in presentation. Similarly children today are very critical of second best because of the quality of the facilities freely available in schools. There is no surer way to lose community and tourist support than for a museum to rush into opening for business well before the quality of displays justifies this action.

2.3.3 Good management and administration

Many museums are organised under committees, and this works well where the committee is involved at a policy rather than at a practical level. Committees should be outwardly looking, while people with a deep involvement and interest should handle the business of the day-to-day running of the museum. If each body has separate functions, there is less likelihood of conflict. It is desirable that a clear line of authority exists between the committee and the workers, but this is usually best achieved where the latter are paid employees. Authority should also be delegated by the committee to individuals or small groups to look after the various day-to-day operations of the museum, such as collection management, display design and development and public interaction (Robins, 1995).

This should free up the time of the manager so that he or she can get on with the task of managing. Unfortunately it is an ironic fact of life that the very skills that help an individual to achieve promotion to the level of manager in a museum may also prevent that person from being an effective manager. This is largely because they attempt to retain their operational roles in addition to their new managerial responsibilities, resulting in overload in the form of stress.

This is evident in, amongst other things:

- things not being done and excuses constantly being made;
- acting in an overly-busy way, characterised by an untidy desk or office, a diary full of meetings, working long hours and spending time on seemingly minor matters;
- unwillingness to delegate, fearing that work for which they have a responsibility will only be done (and done properly) if they personally take charge of it from beginning to end; and
- irritability, with work being reactionary, lacking in careful thought and getting left until the last minute (Fopp, 1997, p.36).

In all organisations there are individuals with differences of opinion and values, conflicts of priorities and goals. There are pressure groups, lobbies, cliques, rivalries, contests, personality conflicts and bonds of alliance. While it is not possible for any organisation, or group of people, to exist in total harmony, effective managers should be able to direct and blend the inevitable difference of opinions, values, priorities, talents and personalities into progress towards a resolution to the conflict (Fopp, 1997).

One way of avoiding the degeneration of argument into conflict is to encourage openness and creative discussion of differences, avoiding degeneration into political conflict.

Regretfully, the formal communication or even the antagonistic ignoring of each other can mask deep-seated conflict, adversely affecting productivity.

The potential of the museum lies ultimately in the hands of the manager of the museum. It is the manager who must set up the internal administrative structures to enable the best use of resources and the achievement of objectives, and it is the manager that must empower staff and audiences to initiate and maintain the two-way communication necessary for its success (Hooper-Greenhill, 1994).

2.3.4 Sound financial and community support

Raising funds for local museums can be a difficult, tedious and often unrewarding task. However the chances of funding can be increased if the local museum applying for a grant from local, State or Federal sources:

- learns grantmanship;
- makes as many contacts as possible, including Commonwealth and State authorities;
- has an appropriate constitution;
- has local support conferring stability on its operation; and
- has the capacity to raise and administer operating funds (Robins, 1995, p.5).

For many smaller museums, opportunities to attract non-governmental funds are limited. Unlike larger national museums, they do not have the benefit of attractive features such as major city locations, prestigious collections, hospitality potential and wealthy patrons. However in the context of diminishing government support, it has become vital that smaller museums develop strategies to attract other possible sources of funds. These might include sponsorship through industry or corporate hospitality, from the public through visitor spending, or from partnerships with voluntary bodies (Hooper-Greenhill, 1994).

Another invaluable resource at the disposal of museums is that of the volunteers. These people often have time to spare and seek opportunities to improve or develop new skills in unpaid work. The smaller museum rarely can afford to employ all the expertise it needs, and volunteers may readily fill those gaps (Robins, 1995). Voluntary staff not only perform tasks at no cost – they also perform the role of agents, promoting the Museum in casual conversation and giving it credibility through their commitment to the institution.

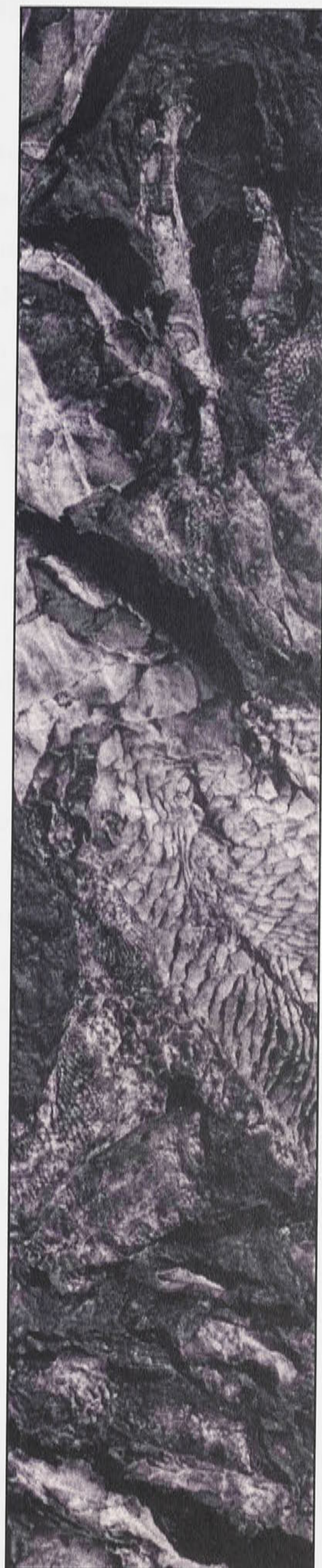
Increased competition from within the museum industry and from other parts of the leisure industry, together with greater demands from audiences, pose significant new challenges for museums. Increased accountability to government and museum governing bodies also emphasises the need for the museum to develop new ways of demonstrating their relevance and value for money.

Museums represent ideal learning environments, and they have enormous resources in their collections, buildings and staff. They are generally seen as places of worth, value and integrity, and on the whole have a relatively good public perception.

However, the functions of the museum as a communicator must be integrated with the functions of the museum as a storehouse for collections and as a tourist attraction, and the knowledge of collections must be related to and generated by the knowledge of the audience. It is imperative that museums embrace all of the practices and philosophies associated with these different roles in order to survive.

Methodology

Chapter 3: Methodology



Chapter 3: Methodology

3.1 Data collection

Data collection was undertaken both quantitatively and qualitatively through a combination of a written questionnaire, personal discussions, and one-on-one tape-recorded interviews. The quantitative information obtained was somewhat limited due to the low response rate to the questionnaire. However, the qualitative information received in response to the free-text survey questions, as well as the opinions obtained via interview, were very useful in constructing a comprehensive picture of the significance of the fossils and the challenges being encountered in bringing them to the attention of the general public.

3.1.1 Written questionnaire

A survey consisting of 16 questions was developed to obtain an overview of stakeholder involvement, and their feelings about the project to date. It also allowed the collection of quantitative data relating to the demographics of the people involved with the Age of Fishes Museum project. A copy of the questionnaire is at **Appendix A**.

The questionnaire was to be distributed with the June 2000 edition of *The Grossi Age*, a biannual newsletter produced by the Age of Fishes Museum and sent to members of the Age of Fishes Museum Board and to the 'Friends of Fossils'. Unfortunately delays in the production of the newsletter meant that the June edition became the July edition, and it was not actually despatched until mid-August. This gave recipients less than a fortnight to complete and return their responses.

The questionnaire was distributed to 520 people. Apart from locals involved with the project, the majority of people on the distribution list had become 'Friends of the Fossils' either through their participation in one of the digs organised by *Gondwana Dreaming* or as a result of a visit to the Museum itself.

Only 41 people responded to the survey, giving a return rate of approximately eight per cent. It had been anticipated that the response rate might be higher, but the shortened response time may have had an adverse effect on the number of questionnaires returned. Moreover, a

survey on the format of the newsletter, which had been distributed with the previous edition of *The Grossi Age*, may have made readers feel overburdened with requests for information. A third possibility may have been that people are less interested in the project now than they used to be.

The survey questions, which can be seen in **Appendix A**, were either demographic (age, sex, educational qualifications, and whether they were a local of Canowindra) or pertained to their role in the project (such as when, why and how they became involved). The questionnaire investigated respondents' views on a number of issues including the role of the Museum, the effectiveness of strategic planning, the development of displays, the achievement of goals, and the success of the Museum as a drawcard to the region. It also attempted to obtain respondents' views on how the Age of Fishes Museum differs from other related museums, and to provide comment on how the future success of the Age of Fishes Museum could be improved.

Participants were asked to indicate whether they consented to being contacted for follow-up interview, and 28 out of the 41 respondents (68 per cent) said yes. It was hoped that one person from each of the stakeholder categories (i.e. historical, local, scientific, tourism, education and management) could be identified for follow-up interview. Unfortunately no responses were received from school students, politicians or Museum employees.

3.1.2 Oral history

Interviewing is a standard way of collecting qualitative data for social research as it is a way of gaining insight into people's thoughts, perceptions and motivations (Marshall & Rossman, 1995). An oral history of the Age of Fishes project was considered to be a valuable way of supplementing the survey responses received, filling the gaps and allowing critical examination of some of the written responses provided. Moreover, it enabled a comprehensive picture of the past to be constructed through the eyes of those actually involved in the project - views that would otherwise be lost with time. The result is a distinctive, individualised history that provides a unique account of the birth of the Canowindra Age of Fishes Museum.

A practical definition of oral history is:

- a tape-recorded interview in question-and-answer format,
- conducted by an interviewer who has some knowledge of the subject to be discussed,
- with a knowledgeable interviewee speaking from personal participation,
- on subjects of historical interest, and
- that is made accessible to other researchers (Robertson, 1997, p2).

Fundamental to qualitative research, such as oral history, is that the researcher poses a few general questions to help uncover the participant's perspective, but otherwise respects how the participant frames and structures the responses (Marshall & Rossman, 1995). For this reason the interviews conducted were of a semi-structured nature, consistent with a constructivist philosophy.

As preparation is vital for successful interviews, I first tried to find out as much as I could through historical records such as back issues of *The Grossi Age*, newspaper clippings, correspondence and other documentation relating to the project. I also attended fossil digs, planning days for the Museum, and special events such as the Building Dedication Ceremony and the Official Shop Opening. Newspaper items and photographs taken during my attendance at such events have been included as a way of enhancing this recorded history of the Museum.

To get the best results from oral history, it is necessary to develop an interest in people as individuals, to have patience and flexibility, the curiosity to ask questions, and the ability to listen to answers (Robertson, 1997) without being judgemental or imposing your own ideas. Rapport was therefore established and maintained with the individuals involved, respecting their points of view and trying to neutrally report what, in many cases, were totally divergent points of view.

3.2 Selecting the interviewees

Because of the time-consuming nature of collecting oral history data, it was decided to limit the number of people interviewed to six. These people were chosen in order to represent a cross-section of stakeholders in the project. Some were chosen as a result of the surveys received, while others were suggested by Ms Bronwyn Reed, Public Programs Manager, Age of Fishes Museum.

As a result, the following people were approached and agreed to participate in an interview as a way of building up an oral history of the Canowindra Age of Fishes project:

- Mr Bruce Loomes – local resident who has been involved in the project in a number of key roles since its inception. A staunch supporter of the fossils since 1988, Mr Loomes was chosen to give a historical account of the project.
- Mr Kevin Walker – local businessman and previous Chairman of the Age of Fishes Museum Board for the past seven years, Mr Walker was asked to give his views on the project from a local business perspective.
- Dr Alex Ritchie – re-discoverer of the fossil site, and founder of the project. A palaeontologist at the Australian Museum, Dr Ritchie was chosen to give a scientific viewpoint on the project.
- Ms Monica Yeung – Manager of the ecotourism company *Gondwana Dreaming*. Ms Yeung was responsible for organising field trips associated with the fossils from 1993 to 1999, and was selected to discuss her involvement in the project from a tourism perspective.
- Ms Mim Loomes – ex-school teacher and Voluntary Education Officer at the Age of Fishes Museum. Ms Loomes has developed a series of educational packages for schools, and has played a key role in promoting the Museum through the Education Department.
- Mr Colin McHenry – Project Manager for the Age of Fishes Museum since 1998. Mr McHenry was interviewed from a planning and management perspective.

Face-to-face interviews were conducted with Mr Loomes and Ms Yeung in Canberra on 22 November 2000; with Mr Walker, Mr McHenry and Ms Loomes in Canowindra on 16 December 2000; and with Dr Ritchie in Sydney on 25 January 2001. These interviews were taped, with the permission of participants. A sample transcript, reproduced with the interviewee's consent, is at **Appendix B**.

3.3 Data analysis

The low response rate to the questionnaire meant that although basic counts and commonalities could be extracted, further in-depth quantitative analysis such as correlations would have been meaningless because of the small sample size. However the questionnaire did elicit some important qualitative information, which is discussed in *Chapter 4: Results and Discussion*. Some of this information prompted follow-up questions at interview, while others have been quoted throughout the relevant sections in order to build up a picture of the types of issues currently being raised with regard to the project.

In analysing the data it became apparent that the study scope could significantly blow out to include contentious political, funding and management issues. While these issues have been covered briefly as they are of concern to a significant number of respondents, the central issue to this research is the success of the Museum in promoting a significant palaeontological find.

Qualitative data analysis is a subjective process of interpretation. In order to provide a contextual approach, *Chapter 4: Results and Discussion* considers stakeholder viewpoints under the following categories:

- Historical
- Local
- Scientific
- Tourism
- Education
- Planning and management.

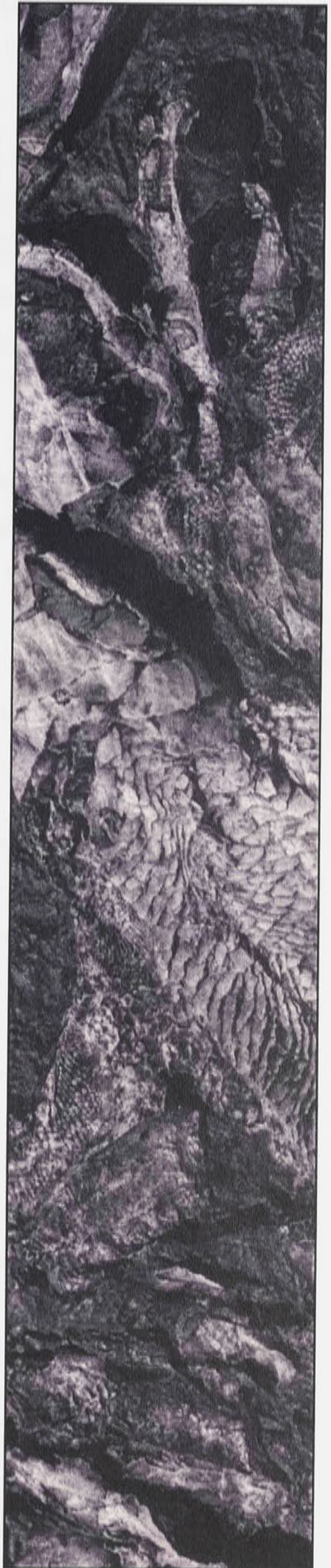
In order to get a bigger picture on the significance of Canowindra's fossils, and to overcome potential parochialism associated with those involved with the find, I also compared the project with two regional fossil sites of World Heritage importance, namely Riversleigh in Queensland, and the Parc de Miguasha in Canada.

Chapter 4:

Results and Discussion

Chapter 4:

Results and Discussion



Chapter 4: Results and Discussion

4.1 Historical perspective

Apart from a feature story in the *Australian Geographic* (Cribb, 1996) and an article in the Murray-Darling Basin Commission’s ‘Reading the Land – Workshop Proceedings’ (Yeung et al., 1997) there have been no significant publications about the Age of Fishes Museum project. Moreover, contact with the Canowindra and District Historical Society revealed no intention of pursuing this goal, as their focus was more on farming equipment and household items.

The following historical information on the Age of Fishes Museum has therefore been summarised from a number of promotional pamphlets, local papers, and the Museum’s newsletter, *The Grossi Age* as a means of providing background to the oral history recorded from some of the key stakeholders.

The questionnaire did not specifically set out to seek historical information. However, Question 2 did ask ‘What year did you become involved in the Age of Fishes project?’.

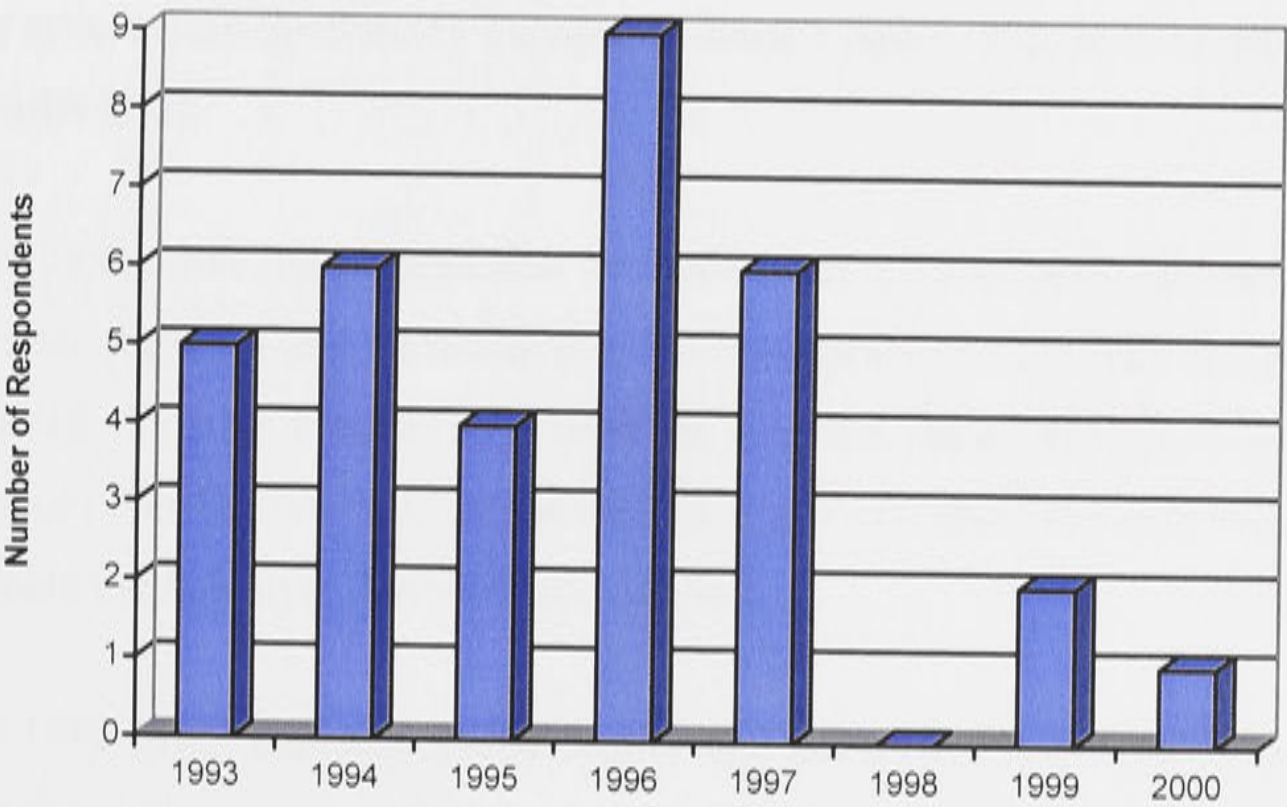


Figure 5: First year that survey respondents became involved in the Age of Fishes Museum project

Although the number of respondents (41) was not high enough to draw any firm conclusions, the results graphed in Figure 5 do show that only a few respondents have become involved in recent years. This may reflect the fact that the respondents were mainly people who became a 'Friend of the Fossils' through their personal involvement during the earlier 'hands-on dig' phase of the project, rather than through an involvement with the more recent Museum-development phase.

4.1.1 How it all began

The chance discovery of the original fossil slab occurred in 1956 when Charlie Stephens, a bulldozer driver, noticed a large, flat rock with strange impressions on it while grading an unsealed road. He propped it up against a fence, where some weeks later Bill Simpson, a local apiarist, noticed it while checking on his beehives. He reported his find to the Boree Shire Council, as well as to the Australian Museum in Sydney. Former museum palaeontologist, Harold Fletcher, and Ted Rayner, of the New South Wales Mines Department, went to assess the discovery. They were so impressed that they brought the slab, containing more than 100 complete fish specimens, back to the Australian Museum, where it has been on display since 1966.

A newspaper article from the Sunday Telegraph, dated 1 April 1956, records this significant event (**Appendix D-2**).

Unfortunately by the time the original slab was recovered in 1956, both the road surface and margins had been regraded and the actual horizon from which the fish slab had come could not be pinpointed. Dr Alex Ritchie, the Australian Museum palaeontologist who had succeeded Harold Fletcher, visited Canowindra six times over the following two decades trying to relocate the fish layer, but without success.

In September 1992 Bruce Burns, a retired dentist who had a farm in the region and an interest in the fossil discovery of 1956, invited Dr Ritchie to give a talk to the Canowindra Rotary Club.

As a result of that talk, the Cabonne Shire Council offered the use of a 22 tonne excavator, together with its driver, Fred Fewings. In January 1993 Dr Ritchie went back and relocated the site within three hours, tracing the fish layer for 20 metres uphill clear of the road. A major excavation of the site took place from 12 - 22 July 1993, backed by business people, farmers, truck drivers, local residents, teachers and students from Canowindra.



Courtesy of Federation Fotos

Figure 6: Dr Alex Ritchie excavating the fossil site upon its rediscovery in 1993

‘When I came to Australia I knew that it (the Canowindra fossil site) existed because I knew that this slab was in the Museum. But when I arrived it was behind very thick glass, and also it was being worked on by Professor Sherbon Hills in Melbourne (he was working on the armoured fishes) and Keith Thomson was working on the single lobe-finned fish, the *Canowindra*. ...but it was the unexpected discovery of the same armoured fish that I’d found in the Antarctic - the *Groenlandaspis* – that it was present on the slab, that made me suddenly take an interest in Canowindra.

So I didn’t go there to collect another few thousand *Bothriolepis* and *Remigolepis*. I would have liked a few more of the *Canowindra grossi*, and we still haven’t got that. But frankly I went there to see if I could get more of the *Groenlandaspis*, and I succeeded...

- Alex Ritchie

4.1.2 History re-told

Mr Bruce Loomes was approached to give a first-hand historical perspective to this study. Mr Loomes has been involved with the fossil site since 1988, and has been a member of the Age of Fishes Museum Board for most of the time, since its inception in 1993. A lifelong resident and farmer from Nyrang Creek, near Canowindra, his extensive knowledge of the fossils and participation in all aspects of the project earned him the name 'the Foreman.'

Mr Loomes has been involved in the management of the project through his participation on the Board; assisting in the fossil digs by being the right-hand man to both *Gondwana Dreaming* personnel and scientists; and by making scientific quality fibreglass casts of the Canowindra fossils. His dedication to the project has seen one of the new species of fish discovered there named after him – *Gooloogongia loomesi*.

The following oral history excerpt has been transcribed from my interview with Mr Loomes. The full version is at **Appendix B**. He begins by recounting his initial involvement, back in 1988.

'It was my next door neighbour (Bruce Burns), actually, who made me be involved because he was new to the area. He came to Canowindra in 1988 and he bought the property next door to me and I was share farming it. And he was very interested in all sorts of activities of the small country town, and the history and so forth, and he knew about some fish fossils he was a little bit interested in. And he wanted to know where they were found and whether I could show him and I did...

He was a dentist from Sydney and he said one day when we've got time we'll go and you show me where they were and I took him over to the actual site but it was road work and back in 1956 when the things were first discovered. It was done with heavy earth moving equipment and they said it would have to be done the same way again.

So he said he'd try and investigate a bit more because he had a dentist practice that was on the opposite corner to the Australian Museum and that took some time to eventuate. And it wasn't until 1993 that it got going properly. In the meantime we'd been over and had a look and Bruce did go over to the Museum and kept in contact with Alex Ritchie and they'd come up and had a look and tried to work out how they'd get a small community town involved...

And it got going in '93 proper and being a local and I only lived two mile away from where the actual site is. Not only that but I was the local fire brigade captain, and it was in my area and of course when it came to a quarry situation with rocks and all that they wanted water and high pressure hoses and all this. So I got asked if the brigade would lend tankers and this sort of stuff. Anyway we sort of got involved from there.

I'm a mad fisherman by heart, and all that, and I thought it was a change, and quite good. And I was born and bred in the area and I could see it was a good thing. And as far as I was concerned, it was probably the only thing Canowindra had got left to create tourism and I thought it would be a really great thing to get behind and try and push it. So we did as much as we could...

And anyhow we had discussions and it finished up that we got one of the community service clubs, which was Rotary, to organise a dinner and a guest night, and Alex Ritchie was invited to it, with Bruce Burns organising all that, to talk at Rotary. And they invited the locals and whoever else was interested and it stemmed from there...

I think the benefit to Canowindra originally is the actual scientific side of it, or what I should say is the digs that were organised by *Gondwana Dreaming*. That's where the town benefited from back in '93 from day one. When the site was uncovered and Alex finished up getting this 70-odd tonne of rock on over a hundred palettes he looked at it and said "Oh it'll take me thirty odd years to clean this up!"

And anyway through Monica Yeung and *Gondwana Dreaming*, being a geologist, she knew Alex and they organised these digs where people come up and pay for the privilege of cleaning the fossils up under scientific direction and it's worked pretty well from '93 through to '99, I suppose. The average would be 20-30 people every month coming to Canowindra.

And the hotels were booked, the motels were booked, home hospitality places were booked, and all the service clubs such as the RSL club, the bowling club and the golf club they all benefited from people having meals there. And the service station and the chemist, the newsagent and the bakers – the essential things - they came off fairly well...

It (the new museum) was opened before it was ready. We were housing it at the old courthouse which was quite good and when we got this grant money and stuff for this new museum they were really keen, some people, not looking to the future, and thought we'd better get it into this new building straight away. Well we weren't ready for the new building and they'd run into problems all the way through with staffing because you can't be called everyday to go and do a volunteer job...

We've had quite a few coach loads of school children, and the whole idea when it first started was to have it as an educational research centre where the students could learn things and of course they're our next generation and they'd carry it on. We could start it and they could carry on with it...

If you give it twenty odd years it might get there, but no, it's very disappointing because originally Dr Alex Ritchie had the vision of a world class fish fossil museum, The Age of Fishes. And it was to be the only Age of Fishes Museum in Australia and virtually in the Southern Hemisphere that actually displayed the uniqueness of the Canowindra fish find. It's so unique because there's that many of them, but because it wouldn't show anything else. At the moment we're putting little bits of dinosaur and gawd knows what else we're putting in it but it's not the same.'

- Bruce Loomes

4.2 Local perspective

Information from a local perspective was obtained mainly from speaking with some of the Canowindra residents, with some additional insights being provided via the questionnaire responses.

Numerous people, skilled on the land but not previously in palaeontology, have willingly learned detailed scientific information about 'their fossils' and are extremely enthusiastic about raising awareness of the find with the general public.

Some have provided years of unpaid support in order to get the project off the ground. Without them, the project would not be where it is today. As one survey respondent stated:

'Considering the small local community, a huge amount has been achieved. It's taken time, but a big congratulations for all those hard working volunteers. The dedication of staff, scientific people and workers is inspiring.'

4.2.1 The volunteer contingent

Volunteers have been the driving force behind the Age of Fishes project since its inception in 1993. In fact, 29 per cent of respondents to the survey recorded their primary involvement as being volunteers. This group predominantly consisted of tour guides as well as participants in the fossil digs and fossil preparations.

At least a thousand paying volunteers have also assisted in the project by helping to clean and prepare the fossil slabs for display. This has been done under the guidance of the ecotourism company, *Gondwana Dreaming*, which has churned its profits back into the Museum's Building Fund and the Project's Research Fund. The scientists, too, provided their time and expertise free of charge.

'I'd say we've put through a thousand, at least a thousand fully paying adults, because we worked out the money that was raised would have been around \$35-\$40,000.

Part of it went to an Age of Fishes Museum Building Fund and part of it went to a Research Fund for Alex and Zerina (the scientists), because nobody was paid to be there. And Alex and Zerina didn't want to be paid, so if we had to pay them to be at the digs it would have come in at about \$500 a day. If I wanted scientists like them on a commercial basis or a tour, that's the kind of money you're looking at.' - Monica Yeung

Volunteers have also been involved in a number of other ways, including serving as members of the Age of Fishes Museum Board, producing *The Grossi Age*, assisting in the preparation of fossil slabs and latex casts, collecting visitor statistics, office work, and undertaking the role of educational officer. Many people have also volunteered financial assistance by joining the 'Friends of the Fossils' and by making donations either in cash or in kind.

The role of the volunteers also extends beyond that of their direct involvement in museum-related duties. They also provide the role of advertising agents, promoting the Museum by word of mouth. Many survey respondents reported word of mouth as their reason for becoming involved in the project. Some comments included 'I became involved in response to the request of a friend who is a local resident', or 'I had a friend involved with project,' or 'I knew about the fish find from...'

However, personal conversations with some of the voluntary Museum staff have indicated some are feeling that their contribution is going unrecognised.

‘And what makes it really bad is having managers or project officers as they were called when we first started off, being paid. We accepted that for a start, but then some people thought he’s supposed to be giving more time than I am, and he’s getting paid and that’s part of his job, so why is he pushing it off onto me? And it sort of stemmed from there. It’s never made enough money to fund itself as far as trying to employ staff, which it should have.’

- Bruce Loomes

‘A few of the volunteers had expressed concern because if someone is being paid there, why don’t they do the job? That’ll turn around. It’s just an initial reaction to what’s happening. We’d like to pay everybody – but if we paid everybody we wouldn’t be where we are now. There’s been hundreds of thousands of dollars in volunteer labour gone into this, if you put it down at ten dollars an hour, it’d add up to tens of thousands of dollars. So you’ve gotta look at it that way. You’ve gotta tell those people with those concerns your hours are counting for a dollar value, but it’s not in your pocket – it’s in the project.’

- Kevin Walker

It appears from comment such as these that there is a degree of frustration regarding the lack of funding, and the resulting inability to provide adequate staffing resources. One volunteer advised that the failure to recognise their efforts, even with an honorarium, has meant that they put in what time they can to what they think should be done, but without any overall coordination or direction.

‘I wrote this thing up about staffing and I said it should have a Manager, preferably who had some scientific knowledge so, you know, things can’t be put over the person, and you can’t be conned into having something at the Museum that isn’t necessary. We needed another person which I called an assistant or whatever, who should be just about as qualified as the Manager because the Manager should actually get off his freckle and go and sell the Museum travelling around. Go buying and begging and doing all sorts of things to promote the Museum. Trying to get exhibits and all that type of stuff, and while he (or she) is away, the second in command could be running the place. And also I put on it we should have two paid full-time staff or guides. The guides should go through a training course, and they should be given uniforms and they should do the thing proper.

But it never happened. It just sort of went along higgledy piggledy...’ - Bruce Loomes

Another survey respondent also commented on the ‘need to have more paid employees to organise and ‘get on’ with the project’. This respondent further suggested that the project needed committed, talented employees to move the project forward into the next phase. A paid Museum Manager, Mr Colin McHenry, was appointed in 1998 (*The Grossi Age*, December 1998). He has recently been supported by Ms Bronwyn Reed, a part-time Public Programs Manager.

Certainly I experienced many problems in trying to locate information from the Museum, due largely to a lack of continuity of voluntary office staff. As one staff member commented ‘the Museum is on full throttle and zooming along, and those involved are running along trying to catch up’.

4.2.2 Local business opportunity

Are the locals seeing any rewards in terms of improvement to the town’s economy, commensurate with the enormous amount of effort that has been put into the project to date by the volunteers? Local opinion appears to be divided on the impact of the project to the town’s economy, and while some have high hopes for the future once the Museum has been officially opened, others remain ambivalent.

There is no doubt that the Museum has generated expenditure within Canowindra, as evidenced by the following:

‘The last three years the Museum has spent close to a million dollars on various capital projects in the region. Most of these dollars have been spent in this region going into the local economy through employing contractors, who then get paid. Then they buy more food from the local grocers. We’ve employed one person, and shortly we’ll employ another two. And yes, tourists do come, they do visit the Museum, and they spend money in town...

I can’t quantify the tourism flow-on dollars without a major research project. It’s not an easy thing to quantify. You actually need quite a well-organised research project to work out how much of the income that all the businesses around here get that’s related to tourism in the first instance, to then say how much comes from the Museum. Well, I don’t know that you’d ever be able to quantify that.’

- Colin McHenry

‘When you think about it, every dollar that comes to Canowindra will somehow have to travel through all the other towns, and it’ll go out through the other towns. It would be kept within the region, but they don’t see the tourist dollar travelling. They don’t see it moving.

I’d like to actually have an exercise and take a weekend’s money all in dollars and spray paint them pink or blue or whatever and make it a big marketing campaign: Where do the Age of Fishes Museum dollars end up? I reckon it would be a terrific exercise. I’ve suggested it to Canberra - they always say the tourism dollar supports the nation. You’ve got to have one starting point, one tourist attraction, and see where those dollars end up. And only then will people understand. Oh this dollar came to me because it first went to the Age of Fishes, otherwise I wouldn’t have this dollar. And I’d love to trail them.’

- Monica Yeung

While some employment has been provided indirectly by purchasing goods and services locally, the opportunities to further develop subsidiary goods and services appear to be somewhat under-utilised. From talking to a number of different people it would appear that there is some degree of frustration about the slow progress being made, largely because of the piecemeal development of the project.

The generation of a range of jobs, the establishment of new businesses, and the drawing of people into the area all inject new money into the economy, which flows through to the local residents. However, there is an apparent lack of interest in developing an industry or boosting the town’s economy based on the Age of Fishes Museum, as reflected in respondents’ answers to the questionnaire.

None of the respondents selected ‘business opportunity’ as a reason for becoming involved in the project, and one respondent even suggested that ‘There seemed to be a conflict between the business area and their need to capture people’. This may be because respondent involvement has been more from an educational or tourism perspective. It may also reflect the fact that people’s attention has not been focussed on commercial opportunities associated with the Museum due to the lack of business and marketing plans.

In fact, 54 per cent ranked the role of the Age of Fishes Museum as being of little importance (i.e. with a score of 0-2 out of 4) in terms of job creation and revenue raising. Maybe their views would have been somewhat different several years ago, based on the views reported in a newspaper article in the Western Magazine on 4 July 1994 (**Appendix D-3**) and comments such as the following:

‘...the locals in the street – the shopping section - everybody was sweating on the tourist, you know. There’d be bus loads of tourists and all the little vacant shops would soon be taken up and leased or rented or whatever and people would have their own coffee shops and that sort of thing. And they were waiting for these tourists. They seemed to think that it would all happen overnight, but that’s not the way it went...it’s just taking too long.’

- Bruce Loomes

None of the local pubs or accommodation places have increased their profile to take advantage of the Age of Fishes connection, nor have the eateries. In fact, personal communication with one of the Museum volunteers indicated that there was a reluctance to set up a coffee shop in conjunction with the Museum, in case it took business away from other similar shops in the town.

‘I think it really cheapens it if every business in town links into the Museum eg Fish Fossil Bakery. That would get very tired very quickly. The fact that this hasn’t happened is a testament that Canowindra does have quite a range of things to offer. And therefore as soon as one credible thing turns up, not everyone feels the need to jump on that bandwagon.’

- Colin McHenry

A few individual people have taken advantage of the business and employment opportunities that have opened as a result of the fossil find. For example, resident architect Mr John Andrews was engaged to design the Museum building. Mr Andrews, a resident of nearby Eugowra had designed many well-known buildings including the Intelsat Headquarters in Washington DC and the Darling Harbour Convention Centre in Sydney, and has won many awards for his designs (*The Grossi Age*, March 1995).

Robyn Wilkinson is another local who has established a business that has links with the Age of Fishes project. Through her photographic business, known as Federation Fotos, Ms Wilkinson has been responsible for many of the photos taken at the original dig, which are now sold as postcards.

Local resident Mr Bruce Loomes also attempted to establish a fossil casting operation in Canowindra, producing fibreglass casts for sale to the public as well as to other museums and universities (*The Grossi Age*, June 1995). Unfortunately this did not develop to its full potential, as he explains:

‘It (the fossil casting) was a great idea, but it sort of got knocked on the head because some people in a small country town think that if somebody’s going to make a dollar then they shouldn’t be, and that you’re only in it because you want to get something out of it monetary-wise.

Well that wasn’t the case. I got involved in it because Alex Ritchie asked me to and the reason why he asked me was because, after working with me for a while, he found out that I was involved in Scouts and I had experience with fibreglass, cos I’d made canoes and kayaks and things in the Scouts. And he said this would be great. A local here, and we could do it on the spot. We could have somebody here making fibreglass replicas of the actual fish fossils.

And of course that was great for about 12 months until politics and all that sort of thing got involved and some people thought somebody else was going to make a dollar in it.’

- Bruce Loomes

Hamilton’s Bluff winery, on the other hand, has had a business success with the release of its *Canowindra grossi* range of wines, whose labels bear the famous fish fossil. In 1999, Qantas announced that it would be including the locally produced wine on its in-flight service, exposing the fish fossil label to a potential 19 million passengers a year. This venture has been a successful marketing and promotional strategy, and has raised \$6,000 for the Museum (*The Grossi Age*, December 1999).

‘...it’s been very good for the Museum and the money we’ve got. It’s fifty cents a bottle, or something like that, and they’ve given us something like \$6,000 from the sale of the wine. And the *Canowindra grossi* wines have now got onto Qantas of course, and that’s promoting *Canowindra grossi* all over the world...

I don’t know if there’s any other industries in the town that could do something similar... We should sit down and have a think tank and try and come up with things to offer.’

- Kevin Walker

Of course it’s early days yet, and therefore somewhat premature to be making a judgement on the economic benefits to the town at this stage. The opening of an Australian Geographic Outlet as part of the Museum’s shop, which took place in December 2000, was seen as a significant turning point in the fund raising activities of the Museum.



Figure 7: Official opening of the Age of Fishes Museum shop by the Chairman of the Board, Mr Ron Cain.

Many of the locals also anticipate that the official opening in April 2001 will provide further local benefits to their town.

‘The town has benefited economically from the Museum, more so after April when Stage Two is finished and up and running. That’s when you’ll see more tourist buses coming through the town. You’ll find not so much the general stores, but cafes and fuel depots and pubs and clubs will profit.’

- Colin McHenry

4.3 Scientific perspective

Of the survey responses received, 27 per cent of people indicated involvement in the Age of Fishes project because of an interest in fossils, 21 per cent because of personal curiosity, and 10 per cent because of scientific involvement. The respondents had high praise for the scientists directing the project, making comments such as:

‘Liked meeting the scientists informally’, ‘knowledge and advice from scientists excellent’, ‘scientists most helpful and informative’, ‘Alex and the other scientists very enthusiastic’ and ‘the work of Dr Alex Ritchie and Dr Zerina Johanson has been excellent in terms of science’.

No responses were received from any of the scientists involved in the project since 1993, making it difficult to obtain comment on the scientific significance of the project. However this shortcoming was addressed by interviewing Dr Alex Ritchie about his involvement in, and views on, the project.

Interestingly, the only scientist who responded to the questionnaire was Dr John Long, current curator of Vertebrate Palaeontology at the Western Australia Museum. Dr Long’s involvement in the project dates back to 1984, when he worked on the original Canowindra slab. He has also written a most informative book entitled ‘The Rise of Fishes’ (Long, 1995) which provides useful background material on the phylogeny of fishes.

Respondents to the survey saw the Museum's roles almost equally as being a tourist centre, scientific facility, science communication, and educational resource. The New South Wales Premier, Mr Bob Carr, confirmed the role of the Museum as a scientific centre, as opposed to a tourist attraction, during the Building Dedication ceremony, when he announced that the Museum had been booked for the Vertebrate Palaeontology of Gondwana Conference in April 2001, as reported in the Canowindra News of 10 February 1999 (**Appendix D-1**). The conference was expected to attract more than 150 delegates from all over the world, and inject over \$330,000 into the local economy. However recent advice from the Museum has confirmed that this conference will not be taking place and, according to some stakeholders, there was never really any intention of it being held there in the first place.

'At the Dedication Ceremony the Museum Manager got John Farr (the Mayor) to announce that there was going to be this Gondwana Symposium and it would draw over a hundred people plus spouses, and it was going to bring in something like \$350,000. I can still remember the figures. And I'm sitting there stunned...

I haven't heard any more of the idea, and under the present circumstances I don't think it would get off the ground... it's pie in the sky. It could happen in the future, but I can't see it happening under the present management.'

- Alex Ritchie

4.3.1 The fish fauna of Canowindra

Detailed palaeontological descriptions of the new species have been published in the scientific literature. The majority of this work has been undertaken by Dr Zerina Johanson from the Australian Museum, in conjunction with Dr Per Ahlberg of The Natural History Museum, London (Johanson, 1995; Ahlberg & Johanson, 1997; Johanson & Ahlberg, 1997; Johanson, 1997; Johanson, 1998; Johanson & Ahlberg, 1998; and Ahlberg, Johanson, & Daeschler, in press).

There is little in the way of published literature on the scientific significance of the site from a layperson's perspective. However, the teachers' resource package produced by the volunteer educational officer contains some clear illustrations and information on the species identified at Canowindra (**Appendix C**).

'Scientifically, the project has been very successful. The time we discovered it was the same year that my successor was appointed (we overlapped for two years). He came from Canada with his wife, Zerina, and I persuaded her to change her research from fossil mammals and to join me in Canowindra. And that was the best thing I ever did – to enlist the help of Zerina and Per Ahlberg. Per came out to Australia and I said: *Zerina's going to do the armoured fishes, would you like to do the lobe-finned fishes?* And of course naturally he said yes. And then I got taken to task (and quite rightly) because Ken Campbell and Gavin Young from the ANU asked why was I handing it to foreigners.

When I thought about it, the best thing was that I didn't welsh on my invitation to Per. I thought that this was a great opportunity to keep Per involved in it, for him to work with Zerina and use his fantastic expertise and his knowledge. So I think they've made a very good team. They've done most of the scientific descriptions, while I ended up doing the organisation and the casting and the supervision of the whole thing.'

- Alex Ritchie

By far the majority of the specimens found at Canowindra are placoderms or 'armoured fishes', which became extinct at the end of the Devonian. The Canowindra fauna is dominated by two particular kinds of armoured fishes, namely *Bothriolepis yeungae*, named after Ms Monica Yeung who helped to organise the preparation of the Canowindra fossils through *Gondwana Dreaming*, and *Remigolepis walkeri*, named after Mr Kevin Walker, founding Chairman of the Age of Fishes Museum. The fish fossils are about 20cm long, and have an armour-plated head and torso. Their eyes lie close together on top of their heads enclosed in bony cups. These fishes have been scientifically described in a number of different publications (Johanson 1995; Johanson 1997; and Johanson 1998).



Figure 8: *Bothriolepis yeungae*, one of the common armoured fish discovered at Canowindra

A third type of placoderm represented in the Canowindra fauna is *Groenlandaspis*. In fact it was the unexpected discovery of two small *Groenlandaspis* specimens on the original 1956 Canowindra slab that eventually led Dr Alex Ritchie to discover and excavate the now famous Canowindra fossil site.

Five sarcopterygians, or ‘lobe-finned fishes’, all of which are new species, have also been discovered. *Canowindra grossi* is perhaps the most well-known of these, and has become somewhat of an icon representing Canowindra. It is known from a single specimen - that found on the original slab discovered in 1956. This unique specimen was described and reconstructed by Dr Keith Thomson in 1973, and to date it is the only one of its kind that has ever been found.

The other three species - *Mandageria fairfaxi*, *Cabonnichthys burnsi*, and *Gooloogongia loomesi* - have only been described and named as recently as 1997 by Drs Johanson and Ahlberg. A new lungfish belonging to the genus *Soederberghia* has also recently been described by Drs Johanson and Ahlberg, together with Dr Daeschler from the Academy of Natural Sciences in Philadelphia.

First to appear in print since the description of *Canowindra grossi* was *Mandageria fairfaxi* (Johanson & Ahlberg, 1997). This fish was named after the Mandagery Sandstone, in which

the fishes were found, and Mr James Fairfax, former Chairman of Fairfax Ltd, who has provided a grant to the Australian Museum Trust in support of the research.

Mandageria fairfaxi is a new genus and species of late Devonian fleshy-finned fish. It was the top predator in the Canowindra fauna, reaching at least 1.6 metres long. Parts of at least ten individuals were recovered from the original site, many of them with well-preserved heads and fins. Unfortunately only the upper surfaces of the fossils could be recovered during the 1993 dig. The detailed belly impressions of at least eight *Mandageria* individuals still remain imprinted in the lower surface of the fish layer, which has been temporarily reburied until sufficient funds have been raised to reopen the site (*The Grossi Age*, December 1997).

The next fish to be described in the scientific literature was *Cabonnichthys burnsi*. The first name recognises Cabonne Council's contribution to the rediscovery and excavation of the original site, and their continued support of the Age of Fishes project since 1993. The species name acknowledges the crucial role played by Dr Bruce Burns, the retired dentist from Sydney who was responsible for sparking interest in the project when he invited Dr Alex Ritchie to talk to the Canowindra Rotary Club about relocating the original fossil site (*The Grossi Age*, June 1998). *Cabonnichthys burnsi* was formally described in the *Journal of Vertebrate Palaeontology* (Ahlberg & Johanson, 1997), where it was also featured on the front cover.

Gooloogongia loomesi, named after the town near where the fossils were discovered, and Bruce Loomes, supporter of the Canowindra fossils since 1993, has been published in *Nature* (Johanson & Ahlberg, 1998). And the lungfish *Soederberghia* has also been recently described, and is soon to be published in the *Journal of Vertebrate Palaeontology* (Ahlberg et al., In press). It is to be named after Bill Simpson, the cabinet-maker and beekeeper who reported the original find to the Museum in 1956.

The fact that the fossils have been scientifically described in peer-reviewed journals has given them both credibility and international recognition, as reported in the *Central Western Daily*, 8 June 1998 (**Appendix D-4**).

‘What came out of it was not only abundant armoured fishes, which we knew were there, but also one of the richest and best preserved assemblages of lobe-finned fishes. We now have five taxa, only one of which we knew before. Where we only had one specimen from the Southern Hemisphere 15-20 years ago, now we have a whole fauna. These show links with Victoria and with Antarctica, and tell us a whole unknown bit of the story of this important group from which we come. We’re related to the amphibians, which came from the lobe-finned fishes. So that’s why Canowindra’s very crucial...

We’ve really only found the tip of the iceberg. We’ve opened up an area with nearly 4,000 fishes. We’ve only lifted the top half of that layer of rock. We’ve seen what I believe is the edge of the pool. I think the rest of the pool is underground. I wouldn’t be surprised if there was another 10-15,000 fishes. I think there’s things that we’ve never seen yet...there’s probably parts of the pool that are more rich in the rarer things and less rich in the common things. So it’s an incredible resource, and it can only really be exploited and done properly by full and equal partnership with the Australian Museum. But we’re not being treated as equal partners, we’re being treated as a facility by the local council.’

- Alex Ritchie

4.3.2 Management of fossils sites in New South Wales

Fossils are an important resource that should be managed properly. However this issue has been largely neglected or approached in a piecemeal fashion in New South Wales (Willis, 1996). In his report, Willis identifies the following issues for consideration in the management of fossil sites in this State:

- Vertebrate fossils are a rare and irreplaceable natural resource.
- Their distribution and the variety of ownership arrangements complicates their effective management.
- There is currently no uniform protection for vertebrate fossils.
- Many have a monetary value that can encourage their inappropriate exploitation.
- There is insufficient funding to monitor, protect and preserve fossil sites or to conduct adequate scientific research.
- There is a poor understanding in the wider community and among policy makers of the rarity and significance of vertebrate fossils and of the need to protect them.
- There are many stakeholders in the management of vertebrate fossils in New South
- Wales and all must be accommodated within any management strategies.

Willis recommends that the benefit of all stakeholders must be considered and maximised, and all must be included in the formulation of management strategies, if they are to be successfully implemented:

‘There are many people and groups with an interest in the future preservation of palaeontological resources in New South Wales, but their interests are many and varied. It is proposed that the maximum benefit to the preservation of vertebrate palaeontological resources can be gained from empowering as many groups as possible with an active role in the protection of these resources and getting the various parties to work in concert’ (Willis, 1996, p.28).

The following quote indicates that not all people share the same view on the importance of palaeontological resources:

‘Well the people own the fossils, I’ve argued from day one. Council said that they owned them and I said that they didn’t bloody own them, they belonged to the people... We had that sort of out with them when we were digging it. They brought mines people on, and the bloke came along. I was involved in that too. He came along, head fella from Orange, and said: *It’s not a quarry and you’re not working it like a quarry, so we can’t say that it’s a mine and we’re not really interested in it. There’s no minerals in there that are of any benefit to us and they’re only fossils. Fossils aren’t any good to us - it’s not oil-bearing fossil or anything like that. It’s only fish fossils and so it’s not a mine, and we’re not interested. Go for it.*

But because it’s on Council land, it was a main road, and ... the taxpayer really owns the Council... so do the people own it, or who?... it’s a national treasure. The fossils belong to the people of Australia... So what do the people say? Put them in a bloody museum where everybody can see them.’

- Bruce Loomes

It would certainly help clarify the situation for both the Age of Fishes Museum, and indeed any future fossil museums, if guidelines on the management of palaeontological sites were developed and adopted either state or nation-wide.

4.3.3 Science communication

Dr Alex Ritchie has played a major role in the story of the Canowindra fossils, as he was the re-discoverer of the site and founder of the Age of Fishes project. He first became interested in Australian fossils in the mid-1960s, and was appointed to the position of Curator of Fossils at the Australian Museum in Sydney in 1968 (Ritchie, 1996).

Dr Ritchie has trained hundreds of volunteers to work on the fossil slabs. He is skilled at bringing science to the people, and in doing so has helped to heighten the public profile of palaeontology with the public, which earned him the ABC Eureka Prize for promotion of science in 1996 (*The Grossi Age*, December 1996).

'In 1996 I was very delighted to get the ABC Eureka Prize for the promotion of science. I think the people of Canowindra thought that I'd got it for Canowindra, but it was really for 28-odd year's worth of work. Because when I came here in '68 I made very good friends with people in the ABC- they're just up the road you see - and so when I came back from the field with something interesting I'd phone them up and say: *I've got this, are you interested?* And Mike Dalez or Robin Williams would say: *Yep, we'll come out and do a story.* Some of my colleagues would say: *Ritchie's big noting himself*, but I'd say no - I've always been paid by the public, and I know the public are interested, and I found that fossil vertebrates are easier things to get media coverage for.

And there was another hidden incentive in that every time I was on the radio or the TV or in the paper I'd get an upsurge of public enquiries by people who had things lying there. *Why don't we send that thing into that chap at the Museum and find out what it is?* And from that surge of enquiries I'd get some very useful tips because of the high profile.

Canowindra was certainly the cream on the gingerbread of the 28 years, but by no means the only thing. Part of it was probably also for kicking the crutches of the creationists. That took an enormous part of my time, which would probably have been better spent on science, but somebody had to do it. So I think promotion and defence of science, it is called...

- Alex Ritchie

Although Dr Ritchie retired as the Australian Museum Palaeontologist in 1995 after 28 years, he has remained an Australian Museum Trust Fellow, and has been intimately involved in the Canowindra Age of Fishes project up until January 2000 (*The Grossi Age*, July 2000).

‘Dr Alex Ritchie resigned from the project in 2000 and it’s been quoted and reported and written up everywhere that he retired. He never retired. He’s still really keen about the whole scientific side of the project, still mad keen on the Canowindra fishes. He still hasn’t written up his paper on the *Groenlandaspis*, which was his favourite fish. He just couldn’t put up with any more of the political crap that was going on.’

- Bruce Loomes

4.4 Tourism perspective

The majority (41 per cent) of responses to the questionnaire indicated that the Age of Fishes Museum was the primary drawcard to the region, with a further 18 per cent ranking regional fossil sites as important. This compares with 27 per cent for Marti’s Balloon Festival. Some respondents commented that Marti’s Balloon Festival occurs only once a year (event tourism) as opposed to the Museum, which is open to the public all year round.

4.4.1 Local and regional attractions

The Canowindra region is a rich agricultural area, with the Cabonne Shire being referred to as *Australia’s Food Basket*. Produce from the region is in high demand in various Sydney restaurants, and the developing wine industry is acquiring a strong reputation.



Figure 9: Visitor Information sign outside the Age of Fishes Museum

There are also several aspects of the Canowindra area that have considerable heritage value. For example the business area of Gaskill Street is listed in the State Heritage Register, and there are many features of an historical value linked to the settlement of the area and the activities of bushrangers in the 19th Century (*The Grossi Age*, October, 1995). Natural heritage features include the fossils from the Canowindra fish deposit and the forests within the Nangar and Conimbula National Parks.

The region around Canowindra also has a number of natural and cultural sites, and the idea of a 'tourist trail' or 'natural history trail' has been suggested as a way of mutually promoting the various regional attractions (*The Grossi Age*, December 1999). This could involve linking the Age of Fishes Museum with other regional attractions such as the Somerville Collection in Bathurst, the Wellington Caves, the Jenolan Caves, the Western Plains Zoo at Dubbo, or the National Dinosaur Museum in Canberra. This suggestion has also been reported in the Central Western Daily of 1 June 1999 (**Appendix D-5**).

‘You could have a wonderful science type thing where you visit Coonabarabran, then Parkes, then here. Wyangala’s got an observatory, and you know there’s lots of connections. Wellington’s not far, just an hour and a bit, and they’ve got the caves. And all the touristy associations are very supportive of each other...’ - Mim Loomes

4.4.2 Regional tourism demographics

Tourism New South Wales has published a document entitled ‘Tourism Trends in New South Wales Explorer Country Regional Biannual Profile, June 1999’ that gives a general overview of tourism in what it refers to as ‘Explorer Country region.’ The Explorer Country region is approximately 200km north west of Sydney, and encompasses 21 local government areas, one of which is Cabonne Shire, where Canowindra is situated.

The document shows that Sydney accounts for 40 per cent of all domestic visitors to the region, and that only 25 per cent of visitors are from interstate. In terms of day visitors to Explorer Country region, all were from New South Wales (20 per cent from Sydney, and 80 per cent from regional New South Wales). The most common form of transport used by domestic visitors to the Explorer Country region was a private vehicle (88 per cent).

The greatest share of overnight travel was for the purpose of holiday or leisure (41 per cent), followed by visiting friends and relatives (34 per cent) and then business (18 per cent). The most popular form of accommodation was the home of friends and relatives (41 per cent), followed by hotel, resort, motel or motor inn accommodation (26 per cent). The duration of visit was one to two nights for almost three-quarters of all visitors.

The most popular leisure activity was visiting friends and relatives (37 per cent), followed by active outdoor or sports activities (17 per cent) and ecotourism (14 per cent). Interestingly, only three per cent visited museums or art galleries (Bureau of Tourism Research, 2000).

This sort of information gives a useful insight as to the broader potential tourist market, as seen through the eyes of people who live beyond Canowindra, and without an intrinsic interest in fossils.

4.4.3 Tourism as a regional development strategy

Tourism is an increasingly important component of regional development strategies. Recent times have seen an enormous growth in the tourism industry in Australia, and tourism is now regarded as one of the key mechanisms for the development and restructuring of the Australian economy (Hall, 1991; Beeton, 1998).

Tourism can diversify and increase the rate base of a community by encouraging new businesses to establish, and by bringing people into the area. This injects new money from outside the region into the local economy, and flows through to the residents in terms of increased employment, new business opportunities, distribution of income directly to regional and local communities via goods and services and enhanced community facilities and local infrastructure (Beeton, 1998).

Other potential spin-offs to the local community include increasing the conservation ethic, highlighting the value of the fossils, providing the local community with the opportunity to meet people from different areas and exchange ideas, and increasing civic pride in the town's fossil discovery.

A poignant example of the importance of tourism in reviving the struggling township of Canowindra comes from the following story recounted by one of its long-term residents:

'In 1983 you might recall...local farmers from here actually dumped wheat on the steps of Parliament House in Canberra. They took a semi-trailer full of wheat and they dumped it right in the doorway to highlight the fact that this wheat was virtually worthless, and not keeping up with prices...

I was feeling extremely depressed at that time. My children were in their early teenage years, and I just thought this little town, and we were told all the little towns, were going to fade away and become ghost towns. And you'd have to go to Cowra or Orange, and it was very depressing because this area ... is a very strong rural and beautiful agricultural area – it'll grow anything out here. It's a really sound agricultural place.

We were told at the time that the only way we'd survive was to diversify, and some farmers have done this and that's how the vineyards have come about. So you've got the diversification from that point of view...but the point I am making is it needed more than that strong agricultural base for a little town to survive. So they had to find a niche. And it wasn't long after that the hot air ballooning people started to come here just to see how the thermals in the air were for flying. And that sort of took off...

And then I think the other thing that happened was that the main street was studied as a heritage site, and there were students who came and talked to shopkeepers about painting their shops, and what colours to use and that sort of thing...

And then of course when the fossils were found in '93, we had a fourth thing that people could come and look at...

- Mim Loomes

Diversification is one of the keys to survival, and branching into tourism and science promotion through the establishment of the Age of Fishes Museum does have the potential to increase the value of tourism to the local economy.

Unfortunately the importance of the Age of Fishes Museum as a significant tourist attraction in the region is not universally accepted beyond the views of the key stakeholders. For example, it is not rated as being of outstanding significance in the bigger picture given by the Explorer Country Tourism Strategy being developed by the Explorer Country Regional Tourism Organisation Inc.

The Strategy has been designed to facilitate the development of an environment within which the tourism in the region can maintain sustainable growth. As part of the strategic process, key market strengths were identified and synthesised into themes that will be the focus of industry development and cooperative marketing over a five-year period. They are:

- | | |
|-------------------------------|-------------|
| • History and Heritage: | 1999-2000 |
| • Gold and Mining: | 2000-2001 |
| • Food and Wine: | 1999 & 2003 |
| • Nature and the Environment: | 2001-2002 |
| • Astronomy and Space: | 2002-2003 |

The Age of Fishes Museum would fall under the Nature and Environment category scheduled for 2001. However the Executive Officer of Explorer Country Tourism advised that the Age of Fishes Museum is 'not a big attraction in the region', and that any marketing for it should be targeted to an 'appropriate receptive audience' (Personal communication).

'Explorer Country don't know what they're talking about... I would say that some of their viewpoints are a little better researched than others. They really need to pull up their act a bit, actually. The average tourist who comes here probably doesn't really understand what we've got, and...if they've just been told by someone or dragged along and told it's about fossil fish, they're certainly not expecting to enjoy themselves. Most of them have a great time, and by the time they've walked out are very positive.'

- Colin McHenry

4.4.4 Matrix ecotourism

Matrix ecotourism is a concept where a wide variety of interest groups work together in a mutually beneficial arrangement. The Canowindra Age of Fishes project had, up until recent times, been a good example of this, with the three main components of the matrix being:

- The local community, which has received an economic boost as a result of increased tourism and funding towards the establishment of the Age of Fishes Museum;
- The scientists, who received funding for research, volunteer labour and logistical support; and
- The tourism company, *Gondwana Dreaming*, which developed a new ecotourism destination, and gained valuable media coverage and exposure to new clients.

Gondwana Dreaming is a Canberra-based ecotourism company that was established in 1991 by Ms Monica Yeung. The company specialises in earth science related tours for small groups, and in customised tours for special interest groups.

In 1993, Ms Yeung suggested the possibility of establishing a cooperative venture whereby groups of clients could spend time working on fossils alongside a palaeontologist. Dr Ritchie was interested in the concept of eco-tourists paying a fee for the privilege of working with him on the project to help prepare and clean the fossils. Together with a small group of far-sighted locals, he also saw the potential for the development of a tourist attraction based on the fossils.

However many of the other locals were sceptical and non-committal – they wanted the tourists and the money such an activity would bring to the township, but they did not want them to touch ‘their fossils’. In spite of this initial reaction, a trial public fossil dig weekend workshop was held in September 1993, attended by 27 people, a TV crew and reporters (Yeung et al., 1997).

‘Letting the public work on the common fossils was the only way we could have cleaned all the slabs in that time. Even sceptics who didn’t think the idea of letting the people loose on the fossils was a good one came to realise that it was the only way that we could do it. And we weren’t really losing much because most people were careful. And just to watch their faces when they were digging – kids to adults...

They got a chance to be part of something special, and we got their services, and we also got money for the project. Canowindra was a perfect example of utilising the public and the public using you for the common benefit of the local community.’

- Alex Ritchie

After gauging the reaction of the first group of fossil enthusiasts, members of the newly established Age of Fishes Museum (AOFM) Committee became more open-minded and held lengthy discussions on such issues as financial arrangements, infrastructure, safety and supervision. Each ‘volunteer’ was charged a set fee, that was paid into the Age of Fishes Museum Building Fund, and *Gondwana Dreaming* also arranged to pay a set fee per participant to the scientists’ research fund for further study into the fossils.

Over 1,000 volunteers have participated in the digs during the period 1993-1999, generating around \$35,000 for the Museum's building and the scientists' research funds. However the focus has now moved to other nearby fossil sites due to the fact that all of the specimens have now been cleaned.

'We started in '93, in September, and then until probably 1998, for the next five years we've been running them (the digs) on a monthly basis, sometimes twice a month, if we had other groups coming in, like separate groups who wanted to come on a separate date. Numbers varied a fair bit. We've probably put through a thousand people, paying adults, we've had school kids in addition to them, and we've had family members. But I'd say we've put through a thousand, at least a thousand fully paying adults, because we worked out the money that was raised would have been around \$35-\$40,000...

And I think it was well known, accepted, that we were doing the right thing until someone started a rumour about how much money we were making and it's so much easier to destroy a good reputation than to build it up...

The digs tapered off because we ran out of rocks, basically. That was the main reason. There was less and less work to be done. Unless we can open the site there really isn't all that much more to do... Basically we couldn't push it and market it as strongly on a monthly basis because we simply didn't have the material...

I'm not actively pushing the Museum until they get back on track. I've really lost interest. We're still offering it to people. We still stop in there and let them have a look at the Museum but we're staying, say, at Grenfell and spending two days at Grenfell; we stay at Forbes and we spend the day at Forbes or in the area there...

There's a lot of other fossil sites that need work and where people can get involved. It just doesn't centre around Canowindra any more. Canowindra has just lost its emphasis... And Alex has been disenfranchised with Canowindra. He's been more or less forced to resign...

We're still having digs with him, it's just not marketed through The Age of Fishes. And I still have things in newspapers and magazines advertised as digging for fossils and fishing for fossils. But Canowindra is no longer the main focus...

And it's only when we stopped going there that some people asked: Aren't you having any more digs? Aren't you bringing any more people? But when we were there nobody ever seemed to appreciate it.'

- Monica Yeung

4.4.5 Visitors to the Age of Fishes Museum

Approximately 31 per cent of survey respondents stated 'tourist' as being their primary reason for being involved in the project, with most stating personal curiosity, and/or an interest in fossils as the catalyst for this involvement.

Sixty-one per cent of all respondents had visited the Age of Fishes Museum, while 56 per cent had been on a field trip associated with the project. Sixty per cent were over 50 years old.

Seventy-nine per cent had tertiary qualifications, from fields as diverse as science, agriculture, education, nursing, economics, and the arts. This could suggest that the type of experience being offered by the Age of Fishes project is more likely to be educational or intellectually stimulating rather than, for example, a fun family holiday experience. Alternatively it might just reflect that this cohort is more likely to have taken the time and effort to respond to the survey.

Demographic information is not collected by the Museum, but anecdotal evidence suggests that the survey respondents were fairly typical, at least in terms of age profile, to the Museum visitors.

'The majority of people interested would be your retirees, or a little bit older, but there's a sprinkling of students, working geologists, and all that.

Probably half family and the other half retirees... You get a small minority of young people 25-30 who come through and have seen things overseas and elsewhere and they usually come with a bit of prior knowledge.'

- Kevin Walker

The following graph shows the number of people who have visited the Age of Fishes Museum since 1996, with a high of 4,723 people attending in 1999.

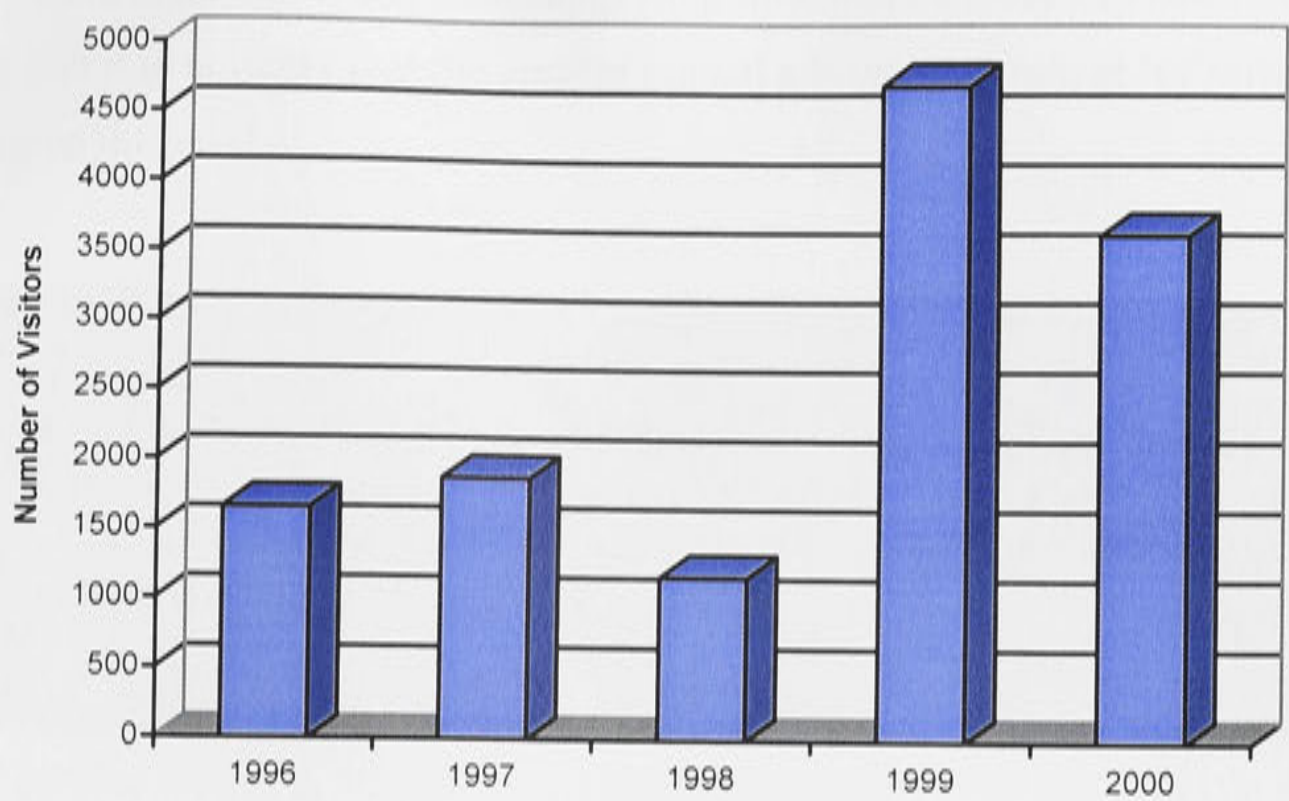


Figure 10: Number of visitors to the Age of Fishes Museum

However the projected figures anticipate that this number will increase to between 15,000 and 25,000 by 2001-2002, and up to even 40,000 by 2004-2005.

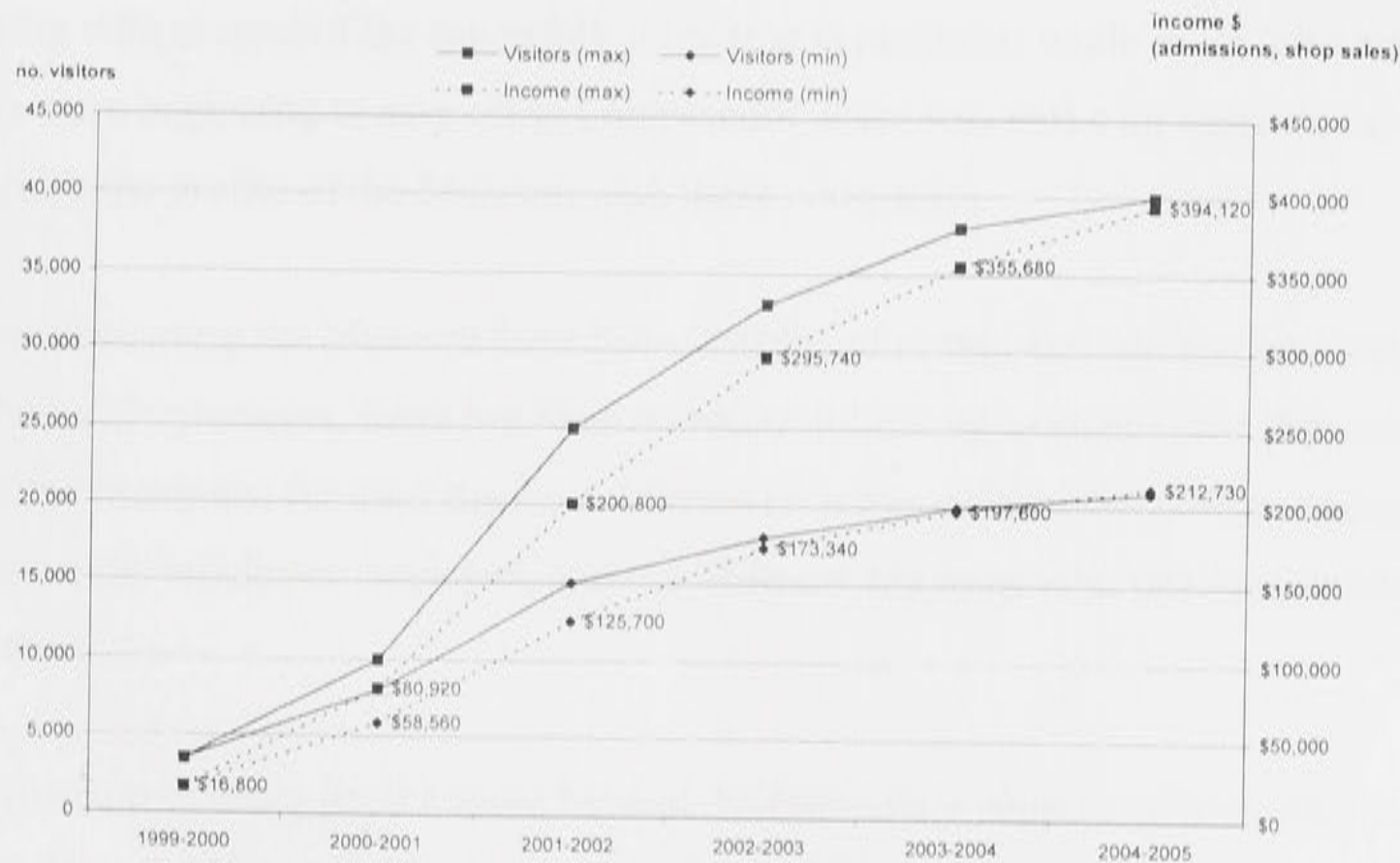


Figure 11: Projected figures for visitor numbers and revenue raised by the Museum, from the draft AOFM Strategic and Business Plan – 1999/2000 Review.

At this stage there is no marketing plan suggesting how this increase in visitor numbers will be achieved, and it is unlikely that the current annual advertising budget 'of virtually zero' is likely to achieve this goal.

'It's all very nice to have these figures, but how are you going to get them? It really comes down to marketing, doesn't it? I can say in 2004 I want to have so many people base per year to make money in my business, but if I don't do anything about getting these people, how the hell are they going to find me?'

- Monica Yeung

Marketing of Canowindra's attractions is in stark contrast with, for example Tourism Southern Highlands, which in a recent SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, identified *lack of funding for promotion* as a major weakness. It has an annual operating and marketing budget of approximately \$375,000 (Baric, Stevenson & van der Veen, 1997).

In speaking with several of the townsfolk it became evident that while more inbound coach operators were beginning to stop off at Canowindra, there was still a lot more that could be done to raise the profile of the Museum with these companies.

Brochures promoting the Museum have been distributed to regional centres but, according to one of the local volunteers, there has been no recent follow-up to ensure that they still have stocks of the brochures for their displays. Moreover, some visitor information centres charge a fee to have the brochures displayed, and the Museum has been reluctant to promote itself through these.

For the Museum to make itself known beyond the immediate vicinity of Bathurst-Orange-Cowra-Forbes, significant professional advertising and marketing should be undertaken to coincide with the Museum's official opening, and beyond.

‘... if it (the Museum) was marketed correctly, everybody who goes through the area wouldn’t miss it and people would make an effort if they were going to it, as there is nowhere else they can see it. So if the vision was maintained and carried out, and that product was then marketed properly, then it could be really busy... You can have the best product in the world, but if nobody knows about it, it’s hard.’ – Monica Yeung

4.5 Educational perspective

While two teachers responded to the survey, unfortunately there were no returns received from either school students or Museum employees, two groups that would have been best placed to provide information from an educational perspective. However this shortcoming was redressed by interviewing the Museum manager and the voluntary Education Officer.

In the survey, respondents were asked to rank the importance of a number of roles for the Age of Fishes Museum. Only four per cent of responses indicated educational development as their reason for becoming involved in the project, although an interest in fossils and personal curiosity ranked highest at 27 and 21 percent respectively.

Some of the comments received relating to educational aspects of the Museum include the following:

- Fossil digs provide excellent science communication.
- Very good for school excursions.
- Should increase promotion for school excursions and provide good (dormitory style) facilities for student visits, and practical things for them to do.
- Great facility for displaying an exciting scientific project with enthusiasm.
- Outstanding guest speaker program – should be promoted more widely.
- World-wide scientific use should be developed on a cooperative basis.

4.5.1 Targeting schools

The Museum, in conjunction with the State Education Department and the local Science Teachers Association, has been actively developing an integrated educational program targeting school groups in the region (*The Grossi Age*, July, 2000), and two well-attended science teacher conferences were held at the Museum in July and September 2000.

Mim Loomes, an ex-school teacher who has assumed the voluntary role of Education Officer, has developed a School Visit Teacher Information Pack with the following aims in mind:

- to stimulate and develop students' interest in fossils;
- to provide information and ideas about these fossils in the history of life;
- to present the knowledge and information in such a way as to engage the student's imagination; and
- to increase student skills in observing, measuring, inferring, communicating, researching and recording.

'I didn't want the kids sitting up with their arms folded to attention doing the old *chalk and talk*. That's not what this is about. It's so diverse....

We construct a human time line. We've got a great long hunk of rope and the kids are given various charts with animals on and they've got to find where they fit in the line. And they all stand along the line, and it takes some time while 35 of them rabbit around and find out where they are...

We've done quite a few dramatisations with some of the smaller people and they love that. Again using the same piece of multipurpose rope – the fifth and sixth class can hold the rope and they're the edge of the pool, and the little kids can be the fish...and then the big kids close in as the pool dries up. And then we have some big sheets of brown paper, and in comes the dust and the fish all lie down, and then we cover them over. And that dramatisation, simple as it sounds, is so effective. It really is good...

They do a lot of hands-on work looking at the slabs, measuring them, working out the position of the fish and that type of thing... We haven't had the facilities to do any actual model work, which is something we've got on the backburner for when the new Stage Two is done. Basically we've had to sit the kids on the floor to do most of the things. The model-making, the cast-making – all that will happen when we get going, because then we'll have table tops and seats for them to sit on...

We've got one school from Orange whose next year will be their sixth year – they bring the whole of sixth class every year. And that's the sort of goal I'd like to achieve... There's a whole range of reasons why schools haven't come here so far. I mean, when you look at the statistics, probably not as many as we'd like. A lot of those are probably internal factors – what's on the syllabus, what's going on at school, what is the socioeconomic climate of the time, are the teachers interested in the excursions...

By and large the students come here and the majority of them go out saying how it really gets to them and it really draws them in. So I think from that point of view, we've only touched a few by what we've done. But with more money and more promotion, I really think we could be huge...

You know it's early days, and if you had a full-time person doing education it's a different matter. But it's all voluntary...'

- Mim Loomes

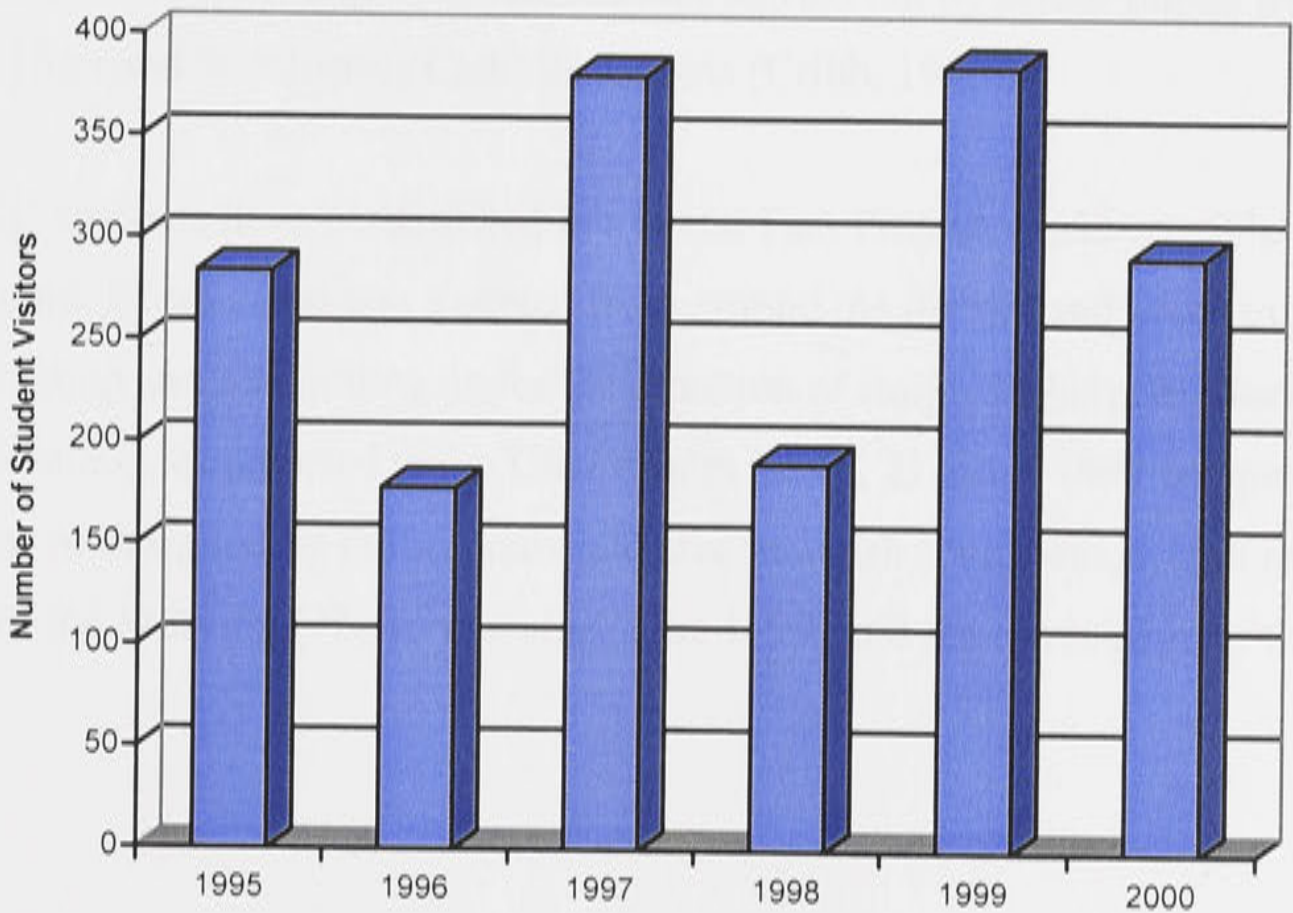


Figure 12: Number of students who have visited the Age of Fishes Museum
(Note: Figures for 2000 are approximate only).

Another recent project embarked on by Ms Loomes has been the development of a book titled *Ossi the Canowindra grossi*, aimed at primary school aged students.

'The story came about because so many times I've had a family with some little kids, and trying to marry what you're trying to say to the adults and what you're saying to the children is quite difficult. I thought, well, if I wrote a book, and it's written as a tale but based on scientific fact, children can either read, or further down the track we might put it onto tape...

These original paintings were done to illustrate the book, which they found a completely new concept. They are beautiful, the originals, and they're actually in the process of being framed and will go in here (the Museum)...

Next year the Eureka Prize has got a section for science books, and we're going to enter into that. Fingers crossed, that might provide enough money to actually publish it...'

- Mim Loomes

High school students from the local schools have also been closely involved with the development of the Museum, as far back as the unearthing of the original fossil site. Initial cleaning (hosing and scrubbing) of the fossils was carried out by senior pupils from Canowindra High and St Edwards Catholic schools (Cribb, 1996).

More recently, students have participated in a Metal Fish Project, made possible by the Artstart Program. Scrap metal was donated from around the district and taken to the High School for welding and assembling under the direction of Ralph Tickerpae, a local sculptor from West Wyalong, as reported in the Canowindra News, 21 April 1999 (**Appendix D-6**). The metal was re-designed by the students into five new fish sculptures, which now adorn the grounds of the Museum (*The Grossi Age*, June 1999) and the cover page of this sub-thesis.



Figure 13: Fish sculpture created by students at Canowindra High School for the Museum

The students' help has also been enlisted in establishing the display ponds within the foyer of the Museum, ready for the official opening of the Museum in April 2001.

'High school kids have come along and helped do the ponds down there. Tony Dagg, the school teacher, said there's fourteen there – there's two interested, four maybe, and the rest couldn't care less. When they finished, the whole lot were interested in promoting the place, so that's a good thing.

And the same thing happened with the sculptures out the front. Thirteen kids came...two or three really enthusiastic, the rest thought: *Oh yeah*. But at the end of the day, they're proud of that now.'

- Kevin Walker

4.5.2 Catering for adults

It is important to recognise that adults comprise an important target group seeking knowledge from museums. The theory of adult education (as discussed in greater depth in *Chapter 2: Literature Review*) is based on several premises, the first of which being that it is different from child learning. Adults have their own agenda for learning based on their developing personal, professional and social roles (Brennan, 1997).

Informal learning settings, such as The Age of Fishes Museum, give adults the opportunity for self-directed learning, ranging from reading text panels, to watching a video, to examining and touching and interpreting the fossils themselves, to having it all personally interpreted by one of the voluntary tour guides.

‘I think that’s what’s kept the volunteers keen over so many years. They have seen the importance of having personal interpretation for people. And it’s just amazing when you talk to people and suddenly the light goes on. Someone walks in who’s got no scientific knowledge about the fish, and you start talking to them and you can see their eyes light up and they say: *I didn’t know any of this*. Or comments like: *I’m going to have to go back and tell the nuns that they taught me wrong* or *I just can’t believe that this is what the world looked like then*. They say things about time: *I can’t get my head around that amount of time – that there were things alive then*. Lots and lots of lights go on...

To be quite honest, you do get those people who walk in, and walk out just the same, but they’re in the minority, I believe...’

- Mim Loomes

Another way of involving the adult community with the Museum has been the introduction of the Visiting Speakers Program. Seminars take place in the evening on the first Monday of the month, but unfortunately are not widely advertised, and because of their timing and location tend to only be attracting the locals.

Science in the Pub, an initiative of the New South Wales branch of the Australian Science Communicators, has also featured the Age of Fishes Museum in an effort to bring the scientific pursuits of the project to an adult audience. The topic *Dead Fish Spark Life in Rural Town?* was discussed between the scientists involved in the project and members of the wider community in the informal setting of the local pub. Compered by Quantum’s Paul Willis, the event covered an issue of relevance to the residents of Canowindra, namely the extent of financial impact such a scientific find can have on a small rural town like Canowindra.

4.5.3 Interactivity

The majority of information planned for the new display is in the form of models, text and graphic panels, and while there will be a video and some computer animations, few of the exhibits are truly interactive.

However one of the key features provided by the Museum is the one-on-one interpretation provided by the volunteer tour guides. This interaction adds a social context to the museum experience, and should not be under-estimated in engaging visitor interest in the displays.

‘The local committee has always been very strong on three points: Hands-on as much as possible (and we do get questions about the security and the preservation of the slabs); one-on-one interpretation, so that you can actually inspire and enthuse people; and that things stay Australian and local. Because so often you go to a museum and it’s really commercial and American. This place would lend itself towards a Disneyland type of interpretation, but that’s not what we want.’

- Mim Loomes

The true interactive experience, however, has been in the activities conducted outside the four walls of the Museum. The fossil digs, organised by *Gondwana Dreaming* and supervised by scientists in the field, have provided readily available advice, interpretative programs on-site, and education about a responsible approach to fossil collecting and preservation.

4.5.4 A knowledge centre for scientists

The Age of Fishes Museum has been billed as a world class facility when completed, that will attract visitors from throughout Australia and overseas. However at this stage the focus appears to be at a regional level, and its role as a knowledge centre for scientists underdeveloped. The opening of the original site, which was to have provided working laboratories for researchers, currently has a low priority, largely because of inadequate funding.

‘One of my ideas was to use the Museum as a resource centre for scientists. I had in mind that we’d have a library there, and that it could be used as a place with labs. A place where you could take university groups, or people on digs, or people who are just interested. Then you could give them a crash course on fishes – not just Canowindra but other fishes. It may still happen. This has only been going ten years – fifty years down the track things might be quite different. I work on a geological time scale – I don’t have to be there. But unless there’s a radical change of the attitude up there, they’re going to be condemned to remain a little restricted country museum, which is a shame. But it’s their decision.’

- Alex Ritchie

‘The thing about the fossil site is you don’t need it to keep your business going – it’s an extra. So therefore you do it when you get the money. There’s no time by which it has to happen. Obviously we’d like to have it sooner rather than later, but really for that sort of money you need to talk to people who are only interested in giving you money for that sort of thing – perhaps the RTA or someone like that – for road-building.

If you got half a million dollars at the moment and told me that I could get anything I want, I don’t think I’d be putting it into site development. I think I would be putting it into the current building.’

- Colin McHenry

4.6 Management and planning perspective

This section examines the role of the Age of Fishes Museum Board, the Cabonne Shire Council and the Australian Museum in the management of the Museum. It highlights concerns being raised by a number of different people regarding lack of direction and documentation.

4.6.1 Mission and objectives

The Age of Fishes Museum Mission, as detailed in the yet to be finalised Strategic and Business Plan, is:

‘To collect and preserve items documenting the natural history of the Canowindra region and Australian palaeoichthyology, and to use them for research and for the enjoyment, education and cultural enrichment of the community’ (Age of Fishes Museum Board, 2000).

Delays in the public release of key strategic documentation such as the Strategic and Business Plan, which is at this stage ‘just a framework’, are of ongoing concern to some stakeholders. As one respondent pointed out, in response to the survey question about how successful the Museum has been in reaching its goals to date, ‘How can you reach goals if they are not determined?’

The following survey responses are some of the typical comments received regarding the Museum’s current management:

- A decent strategic plan should be worked out with all the stakeholders.
- There should be better management/council interaction.
- It has proven a difficulty that the governments have not totally backed the Museum as the piecemeal approach has made long-term planning difficult.
- Disagreement on goals and means of achieving them is causing the dissipation of energy among members of the Board and supporters. There is a need to clarify these and restore harmony and focus as soon as possible.
- It has completely lost the original vision and will not reach any goal until it is placed on the right track.

The following concerns further exemplify some of the issues raised by participants in the study:

‘The strategic plan and the business plan and all that should have been done since day one. And they should have had that all organised and said ok, now this is the five-year or three-year plan. This is what we’ve got to do, this is what we’ve got to expect, the number of tourists that are coming in, the amount of dollars we’re going to get. If it doesn’t work you go through it and revise it in another three years time...

They just seem to plug along from day to day. Each night, I think, when the doors shut they say: *We only made forty dollars today, or we only made twenty dollars – it’ll be better tomorrow.* So without the vision plans, the strategic plans, we’re up a gum tree. As I said to them... we’re like a ship without a captain. You know, we’ve got this ship that’s capable...we’ve got a rough idea where we’ve got to go, but we don’t know how we’re going to get there and we’re just wandering around. And we just need a good captain to steer it and put it in the right direction...’

- Bruce Loomes

It would appear that of all the issues covered, the current management concerns should be addressed as a matter of priority.

4.6.2 Current management

The Age of Fishes Museum is a not-for profit, community museum, run by a community association that operates under Section 355 of the Local Government Act 1993. The rules for running the Age of Fishes Museum are to be established in the *Constitution of the AOFM Inc.*, and the Aims and Principles of the Age of Fishes Museum are to be established in the *AOFM Strategic and Business Plan*. However these documents have not been finalised by the Manager, and are not yet publicly available.

The Age of Fishes Museum is managed by the Age of Fishes Museum Board and consists predominantly of locals, as well as a representative from the Australian Museum and Cabonne Council.

‘It’s a publicly owned collection by the people of New South Wales. The Local Government Authority is, I think, the relevant public agency to deal with, in cooperation with the Australian Museum. It’s a three-way sort of thing between the Age of Fishes, Local Government, and the Australian Museum...

The best thing about the way we operate is that the Age of Fishes Museum is a community run museum that is run by an incorporated body who elect a Board. And the Board is then responsible for the management of the Museum. It’s a democratic process.’

- Colin McHenry

A Memorandum of Understanding between the Age of Fishes Museum, the Australian Museum and Cabonne Council was established in 2000, ‘in recognition of the mutual benefits that can be achieved by an equal and cooperative partnership’. Expected outcomes of the Memorandum of Understanding are to:

- Promote effective communication about the importance of Canowindra’s natural heritage to the public and stakeholder groups.
- Further develop and promote best practice museum management.
- Ensure long-term security of fossils and other natural history items in the AOFM collection.
- Assist in appropriate local government and other public agencies to compile and communicate information related to conservation and land management goals in the Canowindra region.
- Assist effective development of tourism in the Canowindra region (Memorandum of Understanding, 2000).

The Australian Museum has established an important relationship with the Age of Fishes Museum in that it can offer the resources and expertise of a state museum, while the Age of Fishes Museum can offer a regional presence for the city-based institution (*The Grossi Age*, December 1999). Although not officially charged with the systematic collection and curation of vertebrate palaeontological sites in New South Wales, the Australian Museum is responsible for issues related to the natural heritage of New South Wales (Willis, 1996).

‘We’ve had to draw up what we call a Memorandum of Understanding and a Collection Management Policy to make sure that everybody is involved. So there’s three stakeholders and they’re supposed to all have equal parts: The Age of Fishes Museum Committee (or Board, as they like to call it); we’ve got Cabonne Council, and we’ve got the Australian Museum. For some unknown reason it seems to be still just Cabonne Council and the Age of Fishes Board...’

- Bruce Loomes

Cabonne Council is the Local Government Authority responsible for Cabonne, the shire that includes both Canowindra and the fossil fish site on Gooloogong Road. The Council has assisted the project in a number of ways, including participation in strategic direction, facilitating logistical arrangements, and providing financial assistance.

A Cabonne Country Development Group consisting of 32 community representatives was established in 1997 to identify areas that should be harnessed and enhanced to ensure the economic sustainability of each of the eight townships in Cabonne Country. These were developed into a strategic plan entitled *Vision 2007*, and adopted by Cabonne Council in 1998. The Age of Fishes Museum had only a single line in it – ‘The addition of the Age of Fishes Museum gives Canowindra a great opportunity to develop tourism as an economic underpinning to their town’ (Small Towns Development Project, 1998, p.24).

When asked why the Age of Fishes Museum did not feature more prominently in *Vision 2007*, I was advised that:

‘The general feeling throughout the community was that the Age of Fishes Museum Committee was very capably undertaking their task of promoting and administering the Museum and therefore other areas were important to the future of the town and needed priority at that time. This does not in any way undervalue the significance of the Museum or the fossil find in any way, but more reflects the immensity of the task of understanding the wider community issues.’

The three priorities that *were* identified were:

1. the town entrances be attended to as a first priority;
2. an urban design study for the main street addressing the identified needs in this report as well as a consultation with existing businesses; and
3. the Parks and Gardens be developed (Vision 2007, 1998, p.32).

‘(Council) certainly recognises that the fossil find is very important. The General Manager, Graeme Fleming, is really committed to it, and making sure that the project works. The thing is that Council doesn’t take an active role in the management of this Museum, which is a strength. They’re very much in the background. They give a certain amount of money and in kind support, but they really let us get on with it. Rather than managing it themselves, they’d rather set up a community group to manage it effectively, and that’s definitely a much better way of doing it... They are taking – and it’s the right thing to do – a very backseat role.’

- Colin McHenry

4.6.3 Grants and sponsorship

The majority of funding to date has been from the government sector. As well as money from Cabonne, neighbouring Local Government Authorities such as Cowra, Parkes and Blayney and, more recently Orange, have all provided financial assistance, as reported in the Canowindra News of 22 May 1996 (**Appendix D-7**).

‘Council’s very, very supportive with all our submissions we’ve put in on behalf of the Age of Fishes Museum. That’s why we’re so successful with all our State and Federal government grants we get.’

- Colin McHenry

In 1995 the Federal Government provided a grant of \$200,000 as part of its Regional Tourism Development Program. Then in 1996 the New South Wales Government provided grants of \$25,000 to purchase surplus State Rail Authority land for the Museum site (*The Grossi Age*, June 1996), and \$100,000 for capital works (*The Grossi Age*, September 1996).

Funding from the Ministry of Arts 1999 program permitted commencement of the display designs, and was also critical in attracting funding of \$100,000 under the Federal Regional Tourism Program for the construction of Stage Two. Corporate sponsorship has also been received from a number of sources including *Gondwana Dreaming*, James Fairfax, Ampolex Australia Pty. Ltd., the Commonwealth Bank, and Rio Tinto Mining (*The Grossi Age*, June 1999).

'I believe that it ...shouldn't have been a committee like we've got with the council involved in it. Councils don't work real well anywhere. We were told this back in '95. Marti's Balloon Festival was on. We have a big balloon festival in Canowindra and Dick Smith came up – we'd been looking for people...with plenty of money to come up to Canowindra and push.

And so he (Alex Ritchie) finally got Dick Smith to come and have a look at the rocks...we were talking there in the group and he looked at me and he just said: *How's council going? Is council involved?* And I said yeah, and he just looked at me and said: *Oh well, the best of luck!* And that was it. He virtually walked off and left us to it. From that day on, we've never been able to get private or corporate monies because they're frightened of councils.

We've had several thousand dollars from James Fairfax, but that wasn't donated to council. Most of the people who are game enough to give money to the project won't give it to the Age of Fishes - they give it to the scientific research part, handled by the Australian Museum.'

- Bruce Loomes

This view, however, is in stark contrast to the views of other people interviewed, who alluded to the fact that the Museum is expecting to announce significant corporate sponsorship in 2001.

'There's some exciting announcements coming up in the next 8-9 months. Big money, and that's from corporate, not from government. Once they come on board, we would hope that we could milk some other corporates too.'

- Kevin Walker

4.6.4 Future vision

The Museum is being developed in modular stages as more money becomes available, with the existing building representing Stage One. Stage Two was to be a temporary theatre (and later, a temporary exhibition area); Stage Three the remainder of the exhibition area; and Stage 4 a permanent theatre (*The Grossi Age*, May 1997). The reopening of the find site has also been envisaged. This would involve the construction of viewing platforms, workshops and laboratory facilities, where visitors could watch or work alongside the scientists.

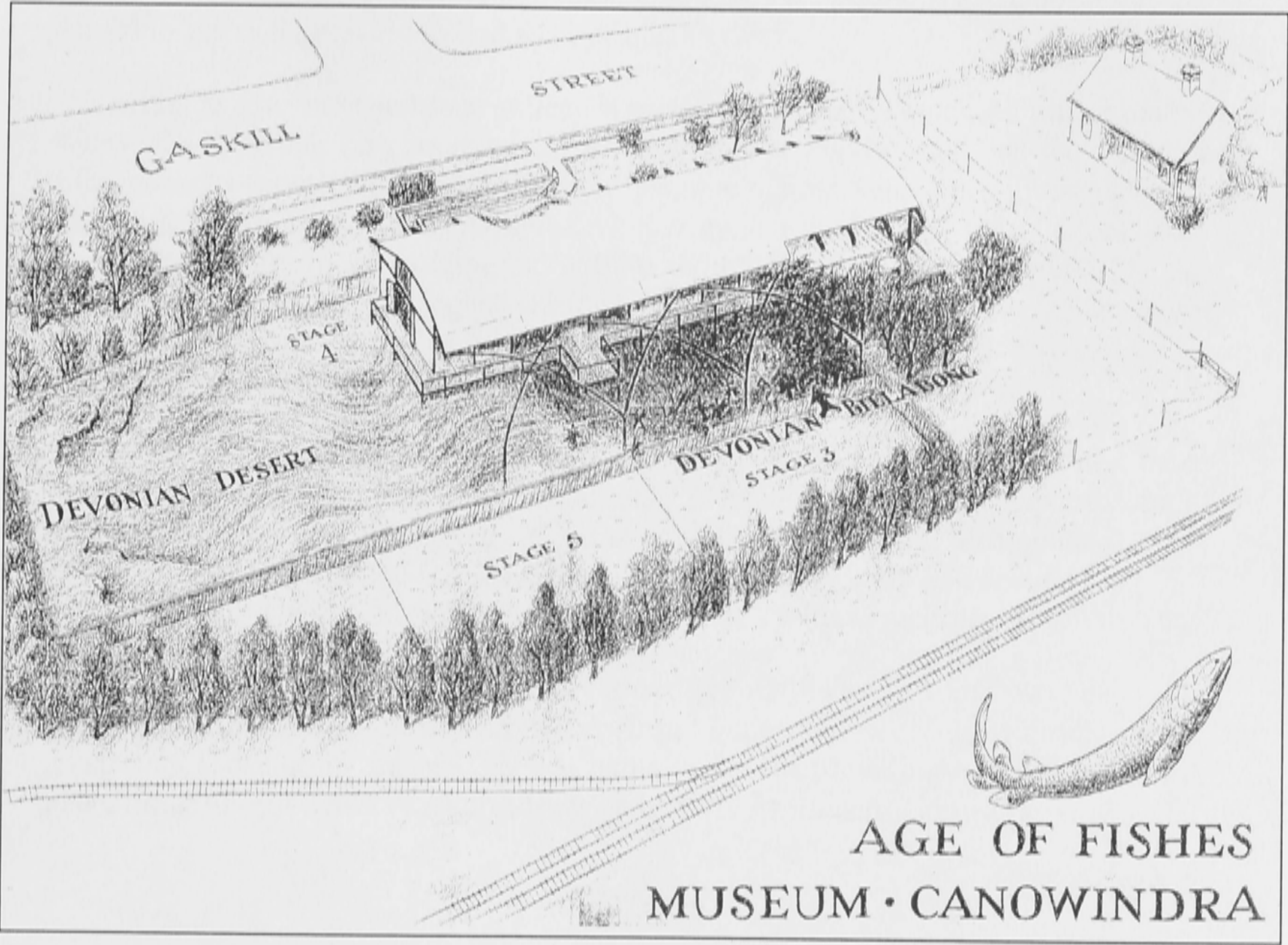


Figure 14: The current plan for the future development of the Age of Fishes Museum.

'Originally there were three stages for the building program. The first one was the entrance foyer, a little theatrette and a little exhibition space. Second stage was the theatrette and Stage Three was a large gallery.

The initial concept has evolved. Stage One has a shop and a permanent exhibition area for the fossils. It will also have at some stage an educational library area upstairs. Stage Two is a multi-purpose gallery that can be used for a public education centre or audiovisual presentations or venue hire. It will try to incorporate as many different roles as we can think of. And when we get up to the point where Stage Two is finished in April, and the travelling exhibitions are in, the Museum is then at a level where you could run it for a few years and have the basic parts that you need. Stage One on its own is not economically viable, but Stage One and Two are. There has definitely been a need to get to that level as soon as possible.

...The Stage Two multipurpose gallery is pretty small and represents a minimum size. We would hope that very soon our levels of activity would be such that we would need a larger multi-function gallery than the 150 square metres Stage Two gives us. Therefore Stage Three will actually be a larger gallery, which will then take on the role of the multipurpose gallery, and will be about 230 square metres and will be able to take much bigger travelling exhibitions. Stage Two will then become a permanent display gallery, so it will give us a really nice permanent display gallery...sort of adding on from the permanent display of the Canowindra fishes.

The travelling displays will include the Chinese dinosaurs, whatever. We want four travelling exhibitions a year, and we will take anything that will get people through the door...I'm not afraid of having a Renoir or something if it comes through. If it gives people in this area a chance to see something they usually wouldn't see, and it's culturally valuable in some way, we'll take it. That's what travelling exhibitions are.

Our permanent exhibits will always be centred around fishes in some way, but travelling exhibitions offer a much wider form of entertainment. For example the Australian Museum in the last year has had a variety of travelling exhibitions. They had Colour, they've had Pharaohs, they've had the Animated Dinosaurs...'

- Colin McHenry

It would appear from conversations with various stakeholders that these were not the original visions for the Age of Fishes Museum, and that the plans for the displays and building purpose have changed in an attempt to make it all things to all people.

‘They had a meeting and I stood up and I said to them: You’ve got the greatest thing in the world in your district, namely the fish fossils. Everybody else has got everything else that you’ve got in this plan, but only you have the fish fossils, so this is your unique selling proposition. Why the heck don’t you build on it? Everybody else has got wine and heritage and history and gold – you name it - and farms, but only this area has got the fish fossils.’

- Monica Yeung

There is also a problem with the proposal to use the upper floor of the Museum, as a public study area incorporating a natural history library and computer reference material, in that it is only accessible by stairs and therefore presents a problem for people with a disability. According to one volunteer, this access issue has already caused difficulties with public meetings, and would be a significant issue because of the high number of elderly people visiting the Museum.

The Museum is also currently in the development and construction phase for exhibits, with the display being based on the original Canowindra ‘touch’ slabs, models, dioramas and reconstructions. The display will consist of some of the fossils themselves, an historical video, a diorama of the billabong, a large Devonian globe, palaeogeography animations, fish tanks, and models illustrating the fossilisation process. Some of these, such as the fish tanks, were constructed to coincide with the Museum shop opening in December 2000.

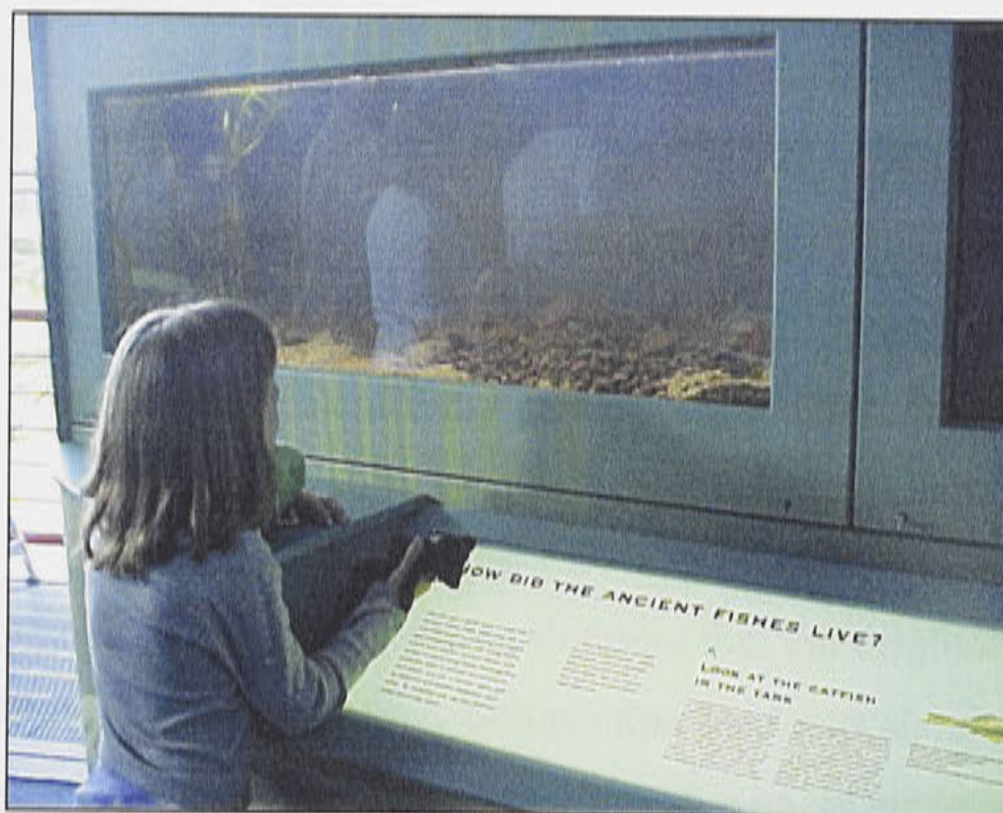


Figure 15: Part of the Museum display, showing live fish.

The original vision for the displays was to show how fishes have evolved over the past 500 million years by including fossil fish specimens from other world-famous sites and different geological periods. In addition, Devonian fossil fish from other parts of Australia, Antarctica and Northern Hemisphere sites would be displayed for comparison. However the display concept has been somewhat modified, apparently with only minimal consultation and without the consensus of all stakeholders.

‘I can’t comment on the current displays because I haven’t seen them, but I saw some of the preliminary plans...It was meant to be open this year, but the people had no idea of the complexity and the work involved in setting up a display. Just the time it takes to make accurate models of animals. You can have it quick and rubbishy, or you can do it properly.

They have had access to a very fine model maker here – Allan Groves – who did *Walking with Dinosaur* models, and I would have given my eye teeth to have worked with him...

The first stage was really only meant to be interpretative – I think there are going to be more aquaria and maybe fewer fossils in it because the manager is trying to turn it into a natural history museum, that’s my impression. It was supposed to be a dedicated fossil fish museum...

I would have liked to have seen an original slab in every major museum in Australia, obviously with an accompanying story and illustrations, saying that if you were in New South Wales you should go and see Canowindra. It would have been an advert. The same thing could apply to the British Museum in London, Berlin, Paris, the California Academy of Science, the Smithsonian...the idea was that we could exchange real specimens and casts of the rare things and that we could, with minimal cost, build up a marvellous world-wide collection through time.’

- Alex Ritchie

Additional outdoor displays are also currently under consideration, including the re-creation of a Devonian habitat in the form of a dry land (red desert) and a billabong.

Some stakeholders have expressed their disappointment that the original vision for the project is not being followed through. They believe that the focus should be on the uniqueness of the local fossils themselves, rather than on a broad ecological theme that would diminish the importance and scientific credibility of the fossil site. There appears to

be quite a dichotomy in stakeholder opinion as to the best way forward, a problem that is being exacerbated by the lack of an overall business plan causing a perceived absence in strategic direction.

4.7 Comparative fossil centres

A couple of the respondents to the survey made reference to the fossil site at Riversleigh in Queensland when answering the question *Why is the Age of Fishes Museum Unique?* One said ‘It specialises in fish fossils of such diversity and high quality. The only other similar area is Riversleigh, Queensland’. The other stated that Canowindra ‘is potentially a jewel of Australian fossil history (in a limited field) once completed and functioning to full potential. It is New South Wales’ Riversleigh and deserves the same recognition’.

This section has therefore been included to put the Canowindra fossil find into a broader, national perspective. A further comparison with the Parc de Miguasha in Canada provides an international comparison, based on a fossil site of a much more comparable geological age. These comparisons demonstrate that although it is of major palaeontological significance, Canowindra is not, as they are, of World Heritage importance. Regardless of this, several respondents remarked that the Age of Fishes Museum should look beyond the local region to national and international fossil sites and visitor interpretation centres, and learns from their experiences, if it is to provide a facility of truly world-class significance.

4.7.1 World Heritage Convention as it applies to fossil sites

The idea for a World Heritage Convention emerged in the 1960s and reflected a global concern about the need to protect the world’s most special places. All countries have sites of local or national heritage significance that are a source of national pride, and it is important that these are protected.

However a site is only placed on the World Heritage List if the World Heritage Committee agrees that it has outstanding universal value. The way that a World Heritage site differs from a site of National or State Heritage lies in the key words ‘outstanding universal value’. Staff at the Age of Fishes Museum are ‘currently writing a proposal for State Heritage Listing, which will probably be presented in February next year’.

To be of 'outstanding universal value' palaeontological sites must:

- Be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological process in the development of landforms, or significant geomorphic or physiographic features; or
- Be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh-water, coastal and marine ecosystems and communities of plants and animals (Luly & Valentine, 1998, p13).

This is determined by asking the following questions:

- Does the site provide fossils that cover an extended period of geological time?
- Does the site provide specimens of a limited number of species, or whole biotic assemblages?
- How unique is the site in yielding fossil specimens for that particular period of geologic time?
- Are there comparable sites elsewhere that contribute to the understanding of the total 'story' of that point in time and space?
- Is the site the only or main location where major scientific advances were (or are being) made that have a substantial contribution to the understanding of life on earth?
- What are the prospects for ongoing discoveries at the site?
- How international is the level of interest in the site?
- Are there other features of natural value associated with the site?
- What is the state of preservation of fossils yielded from the site?
- How relevant is the site in documenting the consequences to modern biota of gradual change through time? (Luly & Valentine, 1998, p15).

World Heritage listed sites that have been specifically listed for their fossil values are very rare, and represent a somewhat recent and novel departure from the norm. Those most widely recognised for their fossil attributes (with year of listing and country) are Grand Canyon National Park (1979, USA); Dinosaur Provincial Park (1979, Canada); Burgess

Shale Site (1980); the Australian fossil Mammal Sites of Riversleigh and Naracoorte (1994); and Messel Pit Fossil Site (1995, Germany) (Luly & Valentine, 1998). Just last year an additional site – the Parc de Miguasha (2000, Canada) was added to the list.

Australian sites need considerable assistance in developing an awareness of both Naracoorte and Riversleigh, and presentation of the material from the Australian Fossil Mammal Sites is currently in a very elementary state (Luly & Valentine, 1998). Most of the information disseminated to the public is done by scientific groups working at each site, and maintenance of recurrent funding for research is a serious issue.

4.7.2 Riversleigh Interpretive Centre, Queensland

Riversleigh is an area of 10,000 hectares within the Lawn Hill National Park. It is located in the inland of northern Queensland, about 200 kilometres south of the Gulf of Carpentaria.



Figure 16: Map indicating location of Riversleigh and Naracoorte

It was granted World Heritage Listing status in 1994 (in conjunction with Naracoorte in South Australia), in recognition of its value in representing both major stages in the earth's evolutionary history, and the significant ongoing geological processes. The Riversleigh fossils tell the story of how Australia's distinctive mammals evolved from rainforest, which previously covered the area, to the semi-arid grassland environment of today (Jones, 1995).

Riversleigh is the richest fossil record in Australia, and one of the richest in the world. Since concentrated work began at Riversleigh in 1983, knowledge about the diversity of Australia's terrestrial mammals has trebled. Among the species found have been the thylacine, flesh-eating kangaroos, marsupial lions, many species of possums, a three metre long lungfish, birds, bats and the mysterious *Thingodonta* (Archer, Hand & Godthelp, 1996).

It should be noted that the geological time periods are not comparable. The Riversleigh fossils are much younger than those of Canowindra, representing life as it was during the Oligo-Miocene period (some 12-25 million years ago), as opposed to the Devonian period (360 million years ago). The number and variety of species are also far in excess of what have been found in Canowindra.

The Riversleigh Centre, like the Age of Fishes Museum, has a representative fossil collection. However their display demonstrates the benefits of having a significantly greater diversity of species as well as a greater budget. In addition to the fossil displays, the Riversleigh Centre has a walk-through tropical rainforest diorama complete with running stream, and a sophisticated display of animal reconstructions, complete with animatronics. One of the most popular sections of the display is a big fake rock housing four computer units that feature the interactive CD-rom 'Tales of the Crypt', computer games and puzzles specifically about Riversleigh. There is also a theatrette designed like a limestone cave, where a documentary on Riversleigh, narrated by David Attenborough, is regularly screened.



Figure 17: Part of the display at Riversleigh Interpretive Centre

The Pasminco Fossil Treatment Laboratory is another feature of the centre, and allows visitors to watch researchers carry out preparatory work on fossil material.

There are several similarities between the two projects. For one thing, an interpretive centre has been established in Mount Isa because it is more accessible than the actual site. The cost of infrastructure for on-site centres in both cases has been prohibitive at this stage. Yet both centres have also been established regionally, as opposed to being city-based.

Comparisons can also be made between common frustration in terms of site, management and funding issues, although the higher profile of Riversleigh has meant that these issues have been made more public. A newspaper article in the Sydney Morning Herald on 9 October 2000 reported ‘political, financial, administrative and cultural problems that now appear insurmountable’ and ‘a continuing shortfall in research funds, a lack of storage for Riversleigh’s riches and an uphill battle manoeuvring through three layers of government’ (**Appendix D-8**).

The researchers working on the site ‘are disillusioned that six years after the site was inscribed on the World Heritage list, it is still far behind Australia’s 13 other World Heritage sites in terms of management.’ They are also concerned that ‘It is the only mainland World Heritage site in Australia that has no infrastructure’.

Riversleigh's partner site at Naracoorte appears to have been more successful in developing a collaborative interpretative venture, drawing on the efforts of Flinders University, the South Australian Department of Environment and Natural Resources and local government (Luly & Valentine, 1998). Naracoorte reflects the convergence of interests between stakeholders and provides a good Australian example of a supportive framework for other Australian fossil sites.

Aborigines, scientists, pastoralists, tourists and bureaucrats, all of whom have an important stake in Riversleigh, equally have an obligation to sort out their differences and to ensure that a balance is found between the competing interests of all the stakeholders. So, too, do the stakeholders involved in the Age of Fishes project.

4.7.3 Parc de Miguasha, Canada

The fossils found at the Parc de Miguasha, situated in eastern Quebec, Canada, are very similar to those uncovered at Canowindra in terms of geological time period. However, they are much more accessible because they are in a cliff face, rather than being located underground.

Although geologists and palaeontologists have studied the Miguasha fossils for more than a century, the area was made a provincial park as recently as 1985, with a view to protecting the three-kilometre cliff from which the fossils appear as erosion occurs.

The Parc de Miguasha was subsequently declared a World Heritage Site in 2000 because of the richness and importance of the Late Devonian fossil fishes discovered there over the past 150 years. The park is only the seventh fossil site to be accepted for World Heritage Classification (Anon., 2000).

Miguasha is unique in the world for its biodiversity, biological representation, for its span of evolutionary processes, its environmental significance, and the quality of the fossils found there. This is based on a comparative study undertaken in 1998, which ranks Miguasha first, and Canowindra fifteenth, in terms of the most representative of all the Devonian fossiliferous sites world-wide, based on a number of pre-determined criteria (Cloutier & Lelievre, 1998).

More than 14,000 specimens having been collected from Miguasha, and they are of extreme importance because the collection includes some of the first primitive trees, the first terrestrial scorpion, and some of the first fish species showing signs of amphibian adaptations to land (Cloutier & Lelievre, 1998).

As with Canowindra, an interpretive museum has been established in conjunction with the site. Although it is only open from May to September each year, the Miguasha museum attracts some 40,000 tourists annually, as well as many scientists from around the world (Personal communication).

'I visited Miguasha for a conference in 1991 and spent over a week there, and it sort of cemented in my mind what a local rural community could do with a major fossil find by keeping it on the spot. So in 1993 when I did the trial dig I thought - I've seen it work; I can do the same as they did in Miguasha. Canowindra is a lot less isolated than Miguasha, with a much bigger population to draw on. But while Miguasha did have an effect, the design, the layout and the content would be nothing really like it...

They would have had enough money. Being a government thing, they had access to more money than we did from the start. But our Museum would be completely different. Its director, Mr Marius Arsenault, didn't go all out to tell the stories of the fishes of the world – it was the Miguasha story, and it went into amphibians, reptiles and mammals. I wouldn't have done that – I would have stuck to fishes.' - Alex Ritchie

Mr Marius Arsenault, the director of the Parc de Miguasha, has shared his extensive experience and knowledge with the Age of Fishes Museum Board and management, and believes that Canowindra has the potential to follow in the footsteps of Miguasha. In fact, because of the close relationships of the fossil finds from Canowindra and Miguasha, he has twice visited Canowindra. The first time was for the ground breaking ceremony in 1996, and the second for the Dedication of the Age of Fishes Museum in early 1999.

Mr Bruce Loomes was invited to attend the World Heritage Dedication Ceremony held at Miguasha on 29 June 2000, as the Australian Museum's representative, and recounts the following as a result of this experience:

‘Miguasha has got the same sort of fossils as we’ve got. It’s a different set up because the actual Museum is right on the site. And the site’s on a cliff face on the river. And their Museum is only open for three or four months each year. So they put something like 50,000 people through in three or four months. And we’d be flat out doing that in a couple of years, I’d say. I don’t know exactly what our figures are but they’re not that great. If we didn’t have the school kids going through... But they’ve got a great collection. Their fossil fish, most of their stuff is shaly and it’s broken up a lot, where our fish fossils are all intact. You know it’s all in big solid quartzite rock.

The Museum itself is a one off on its own. It’s out in the middle of nowhere, 20 odd kilometres away from the nearest town, and tourists still come to it. It’s taken 20 odd years to develop it. It’s very professionally done. Marius Arsenault, who is the Director, he started it. He originated it just from a dream, just from a building, just like a shed, and they gradually built it up to what it is today. Didn’t get anything really until recently they started to get money from the Quebec government and then they made it into a Park, and then they got recognition that way.

Why I went over there - I was invited by Marius and the Quebec government to go over there to represent Australia, or actually as the Australian Museum representative to go to the ceremony of the World Heritage, because they’d just won a World Heritage Listing. And it was a terrific thing for me, and I went over there, and I’d never been out of the country before, and it opened my eyes up as far as the Museum’s concerned and what you could do and what you couldn’t do.

But to this day, and that’s three or four months ago, I’ve never ever been asked by any of the Canowindra Committee, the Board, or any of the persons, council or whatever, what did I think of Miguasha, what could we learn, what could we do. I’ve never ever been asked. I was asked by two people how my trip went and this is just the way a small country town people think. You know because I went to Miguasha and they didn’t. Yeah, there’s heaps of lessons. I could tell them a lot about what we should be doing, shouldn’t be doing, and haven’t done.’

- Bruce Loomes



Figure 18: Mr Bruce Loomes of Canowindra and Dr Marius Arsenault at the unveiling of the plaque to celebrate the Parc de Miguasha's World Heritage Listing.

Marius Arsenault’s experience and advice appears to have been ignored. He wrote a report on his visit to the Age of Fishes Museum in February 1999, in which he raised a number of problems and advises: ‘I cannot tell you how to fix these problems...this is something you... will have to discuss and sort out together. But sort it out you must, if your Museum is to succeed internationally’.

Mr Arsenault also made the following recommendations to the Board, based on his extensive experience and success with the Parc de Miguasha. On the mission and main objectives of the Age of Fishes Museum, he suggested that:

- They should be defined and written rapidly. This should happen in consultation with all stakeholders, probably best done in a workshop environment so that at the end EVERYBODY agrees and understands what the mission and the objectives of the Age of Fishes Museum are. The mission should be related to the protection of the site and enhancing the fossil fauna of Canowindra;
- The mission and objectives should be revisited and reconsidered on a regular basis and updated as the need arises; and

- A 'Table of Harmonisation' should be developed to show the future of the Age of Fishes Museum in a global context along with different partners representing all kinds of institutions, organisations in tourism, culture and science, business, etc.

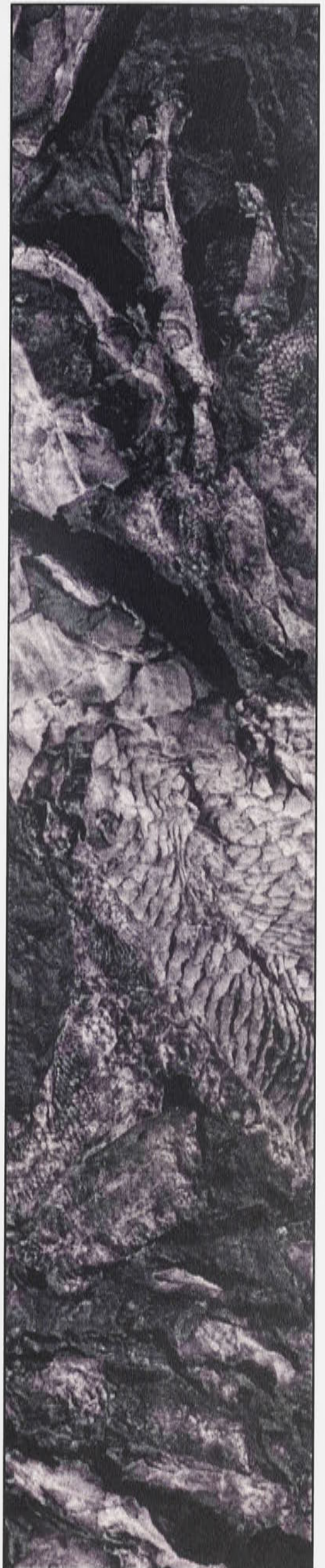
On the scientific and management aspects of Age of Fishes Museum, he recommended that:

- A scientific committee, under the leadership of Dr Alex Ritchie, should be formed rapidly, with the mandate to establish the concept and the design of the exhibit, based on the above mentioned mission and objectives;
- This scientific committee should also be responsible for writing up the scientific aspects of the training manual for the Museum's staff;
- A clear definition of the roles, mandates and responsibilities for each level of the organisation of the AOFM should be established and written down (ie the manager, the committee, sub-committees);
- The structure of the operational sub-committees should consist of one chairperson with at most two or three additional persons, and that these sub-committees should be given short-term mandates;
- A sub-committee whose mandate it will be to find and organise special events to help promote and finance the AOFM should be formed;
- The organisational structure should be updated on a regular basis, with a revision of the objectives and mandates of each sub-committee as the Museum evolves; and
- The committee should offer management courses to the manager, related to public and human relations, staff management and budget (Arsenault, 1999).

It is no coincidence that Miguasha has done as well as it has, and the Age of Fishes Management would do well to accept the assistance that has been offered by its international, World Heritage 'Big Sister' site of Miguasha.

Chapter 5:

Summary and Conclusions



Chapter 5: Summary and Conclusions

In 1993 a significant fish fossil site was unearthed near the country town of Canowindra in New South Wales. This study has documented events and opinions leading up to the opening of the Canowindra Age of Fishes Museum, an establishment being developed to display and promote the fossils to the general public.

It is too early to gauge the *general* public's satisfaction with the Age of Fishes Museum, given that it is not due to be officially opened until April 2001. Indeed, this was not the purpose of this particular study. Rather, this study has attempted to gauge the success of the Age of Fishes Museum project, as it stands today, through the eyes of key stakeholders, through survey responses received from a number of 'Friends of the Fossils', and through an examination of the relevant literature.

It can be concluded from the literature that a successful museum depends on more than just a product deemed to be worthwhile by management, developed in isolation from public input. It must meet the needs of consumers by being sociable, interactive entertaining, informative, and educational. It also needs to have good management, sound strategic, marketing and business plans, and financial and community support (Robins, 1995).

According to the views of participants in this study, it would appear that the Age of Fishes Museum has had mixed success in meeting these criteria. As noted by one survey respondent:

'The Age of Fishes Museum is a very modest development to date, and its achievements have been modest in most areas. The potential, however, is enormous.'

The various stakeholders differ markedly in their opinions on the success of the Age of Fishes Museum, with half being satisfied with its progress, and the other half having significant grievances.

5.1 Success of the Age of Fishes Museum

Each museum visitor's experience is unique, and can be conceptualised by the interaction of different personal, social and physical contexts (Falk & Dierking, 1992). For this reason, no two people will judge the success of the Age of Fishes Museum in the same way. It is therefore important to understand and identify the type of audience that is likely to find the Museum worthwhile, to build their needs into the Museum and its displays, and to target that audience when promoting the Museum (McLean, 1997).

One of the first steps in determining whether the Museum has a worthwhile product is to ask the public. Although no formal marketing exercise has been undertaken with regard to the Age of Fishes Museum, responses received from survey respondents in this study indicated that they were generally satisfied with the Museum and its progress to date.

Although this sample was biased due to pre-existing interest in the project, comments in the visitor information book also remark favourably on the Museum. The fact that the Parc de Miguasha, a similar type of museum in Canada, can draw 40,000 visitors every year (Personal communication) gives testimony to the belief that there is an audience interested in this type of exhibition. However, until the Museum is officially opened and consumer feedback is obtained, the potential degree of visitor satisfaction remains largely unknown.

One way that museums can help to ensure their ongoing success is by offering an experience that is sociable and entertaining - one that fits the roles of leisure and tourism, as well as of public learning and research (Hooper-Greenhill, 1994). The Age of Fishes Museum appears to be placing a greater emphasis on the latter role, as was obvious both from discussions with key stakeholders, as well as from the external signage that promotes the Museum as a 'Research and Learning Centre'.

The Age of Fishes Museum does not offer the interactivity and sense of fun provided by science centres such as Questacon - the National Science and Technology Centre. However, the one-on-one explanations by volunteer tour guides at the Museum have helped to bridge the gap between the predominantly static displays of the past, and the need for personal interpretation and social interaction. The hands-on fossil experiences, such as those offered by *Gondwana Dreaming*, have also helped to enhance visitors' experiences in the past.

Museums are excellent centres for both formal and informal learning. The Age of Fishes Museum has already begun to address formal education issues through the development of student workbooks in line with the school curriculum, as well as the introduction of various interactive activities aimed at school groups. There should be further opportunity for this type of interactive educational experience, perhaps in line with the *Fossils* program that has been developed in New Zealand (Gardner, 2001), once the completion of Stage Two of the building allows for additional working space.

The Age of Fishes Museum also offers opportunities for adult education and self-directed learning. It would appear, at least from the views of many survey respondents, that the Museum has a particular appeal for the over-fifty age group.

To make the best use of limited financial and staffing resources, the management of the Age of Fishes Museum needs to establish strategic direction as a matter of priority. In fact, management issues and a need to formulate and officially document strategic plans, mission statements and objectives for the Museum, were highlighted by several of the survey respondents and stakeholders as requiring urgent attention. This matter has also been brought to the attention of management previously in 1999, when Marius Arsenault, Director of the Parc de Miguasha, Quebec, advised:

‘I explained to the members of the Committee that the definition of the mission and the objectives should have been done a long time ago. Soon, you will begin to give the Age of Fishes Museum its personality, its signature. Soon you will be confronted by problems of perception of what your exhibit should be, what to include in the exhibit, what to leave out of the exhibit, what kind of audience should the exhibit be targeted for, etc, etc.

...Every human being has different perceptions from his neighbours and, sometimes, different perceptions or opinions can lead to non-fruitful discussions that are far from being constructive. This is why you must define now, the mission and the main objectives of the Age of Fishes Museum.

...A mission and objectives must be very simple and explicit. Everyone should understand it, even, and especially, every citizen of Canowindra and all future visitors. This will be the *raison d'être*, the reason for the existence of the Age of Fishes Museum.'

5.2 Limitations of the study

Several limitations have been identified regarding this study.

Firstly, the people surveyed and interviewed were a biased sample of the general population, having an inherent interest in fossils, or in the Museum itself. However this group was targeted deliberately, given that the general public outside of the Canowindra region are, by and large, unaware of the Museum's existence.

It would have been interesting to determine what the wider community thinks about the Age of Fishes Museum. As discussed in the literature review, the only way to discover what keeps people away from a museum is to talk to the people who don't want to visit, rather than those that do (Merriman, 1993).

Secondly, there was a low response rate to the questionnaire, preventing detailed quantitative analysis of the results. The low response rate also meant that the views expressed may not have been representative of the total number of people who were sent the questionnaire. However the information obtained in this way was validated and supplemented by interviewing an additional sample of key stakeholders.

Because of the time-consuming nature of oral history, only six people were interviewed. Ideally a larger number of people would have been approached in order to get a wider range of opinions.

Finally, the Museum had originally been scheduled to open in December 2000, rather than in April 2001. If this had happened, then it would have been possible to add value to the study by being able to evaluate the exhibits themselves, as well as visitor interaction with them.

5.3 Recommendations

The following recommendations have been identified to redress some of the issues raised by both stakeholders and survey respondents. It is hoped that these recommendations will be considered by the Age of Fishes Board, as well as anyone else interested in ensuring the future success of the Age of Fishes Project:

1. A documented mission statement, as well as strategic, administrative, business and marketing plans, should be developed in consultation with all stakeholders and finalised as a matter of priority. These documents should be reviewed and updated at regular intervals as required.
2. As part of the administrative plan, a series of short-term achievable objectives should be documented. This would then lead to a feeling of satisfaction resulting from regular, ongoing progress, rather than the frustration that can be generated by long-term problems. It would also lead to regular, ongoing improvement of the collections and displays, for the benefit of the visiting public.
3. A detailed review of staffing requirements should also be incorporated into the administrative plan. Authority should be delegated to separate individuals or small groups to look after the various day-to-day operations of the museum, such as collection management, display design and development, and public relations. This would free up the manager's time to focus on policy and strategic issues.
4. Also of immediate importance is the need to direct more effort towards identifying the target audience, whether it be tourists passing through, school groups, the over-fifties, or regular museum-goers. Ideally, promotion of the Museum's existence with the target groups should take place during the lead up to the Museum's official opening. The Museum has already had moderate success promoting itself with regional schools, as well as through wine sales and hands-on fossil digs, and should aim to further build upon these successes.

5. Following on from this process, the Museum should market itself nationally and internationally, in order to raise its profile beyond the local region. Exchanging fossils (or casts) with other institutions would be an effective and cheap way of targeting potentially interested museum-goers from outside the Canowindra region. There is certainly plenty of material available, which at this stage remains in storage at the Canowindra showground.
6. Survey respondents reflected the power of word of mouth in attracting visitors, but commented on the need for greater advertising, consistent national and international media exposure, affiliation and shared publicity with other museums such as the Australian Museum, and better promotion through coach companies and schools. These are sound suggestions that should be considered.
7. The public should also be given the opportunity to participate in the exhibition process. They should be involved in an ongoing evaluation of the displays after the Museum has been officially opened, as well as in the trialing of exhibits during their production.
8. If lack of funding for any of the above is considered to be a limiting factor, then management should set financial goals and increase funding-seeking activities to meet the shortfall. It should also increase its capacity to raise and administer operating funds. Funding to date has been largely from the public sector, and this is not an infinite resource. Several survey responses mentioned the need for more stable funding, as well as the need to *continue* seeking funding more pro-actively.
9. Management would also do well to examine how the Parc de Miguasha has achieved the success that it has, given the similarities in terms of rural location, and the types of fossils being promoted. It should be responsive to criticism and open to suggestions, rather than working in isolation within a policy vacuum.
10. Finally, the stakeholders need to put their individual differences behind them and work towards a common mission that is agreeable to all parties. Scientists, locals, tourism agencies and bureaucrats, all of who have an important stake in the Museum, equally

have an obligation to sort out their differences and to ensure that a balance is found between the competing interests of all the stakeholders. The manager has a key role to play in bringing these divergent views to a satisfactory compromise.

The following quote from someone closely involved in the project encapsulates the current situation with the Canowindra Age of Fishes Museum:

‘Wonderful find, wonderful fossils, wonderful building, wonderful tourism potential and future, however under-resourced and lots of politics... Much of the information exists in everyone’s minds – nothing is organised on paper. There lies the problem.’

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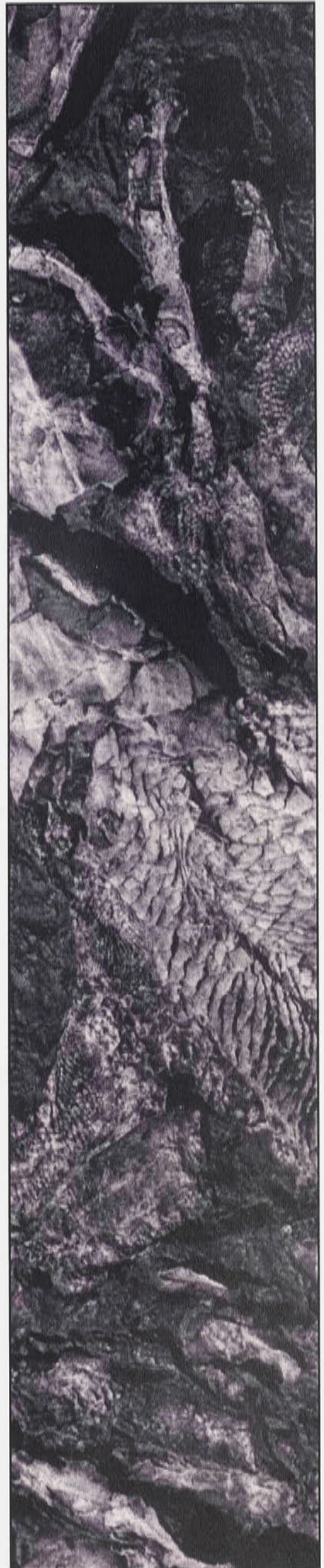
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Appendices





THE AUSTRALIAN NATIONAL UNIVERSITY

The Canowindra Age of Fishes Project - Birth of a Museum Questionnaire

Would you like to participate in a study being undertaken at the Australian National University? The study, entitled '*The Canowindra Age of Fishes Project - Birth of a Museum*,' aims to trace the historical development of the Age of Fishes Project at Canowindra, from the discovery of the original fossil slab in 1956 to the present day.

The aim of this brief questionnaire is to find out about your involvement and thoughts on the Age of Fishes Project. The study will gather the views of all stakeholders, (including locals, professionals, businesses, students, teachers, scientists, politicians, tourists, communicators, etc) in order to construct a historical record of this significant find.

Participation in the study is purely voluntary, as is the option of providing your name and telephone number. However if you have played a key role in the development of the project or have an interesting tale to tell, I would appreciate the opportunity to talk to you in more detail. The identity of participants will not be disclosed without permission, and all raw material will be securely stored and discarded upon completion of the study.

When you have answered all of the questions, please return the questionnaire to the following address. **You don't need a stamp** - just put the form in the envelope and send it to:

Christine Finch

Reply Paid 66983

Building 42

Centre for the Public Awareness of Science

AUSTRALIAN NATIONAL UNIVERSITY ACT 0200

Please note that your response should be received by **31 August 2000** in order to be included in this study.

If you would like to obtain further information, please contact me on (02) 62924867(ah) or email wfinch@pcug.org.au.

Thank you for your assistance,

Christine Finch

THE CANOWINDRA AGE OF FISHES PROJECT - BIRTH OF A MUSEUM
QUESTIONNAIRE

1. What has been your primary involvement in the project?

- ☐1 Tourist
- ☐2 Tour operator
- ☐3 School student
- ☐4 Teacher
- ☐5 Local business person
- ☐6 Scientist
- ☐7 Politician
- ☐8 Sponsor
- ☐9 Museum employee
- ☐10 Volunteer (please specify in what capacity)
- ☐11 Other (please specify)

2. What year did you first become involved in the Age of Fishes Project?

3. What prompted you to become involved in the Project?

- ☐1 Personal curiosity
- ☐2 Wanted to do something different
- ☐3 Interest in fossils
- ☐4 Scientific involvement
- ☐5 Educational development
- ☐6 Business opportunity
- ☐7 Recreational activity
- ☐8 Promote profile of Canowindra
- ☐9 Other (please specify)

4. Have you been on a field trip associated with the project, or helped prepare the rock slabs for research? Y/N

If yes, what is your opinion of the activities, and the role of the scientists in assisting with the process?

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.....

5. Have you visited the new Age of Fishes Museum? Y/N

If yes, what is your opinion of the current and planned displays for the museum?

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.....

6. Have you attended any of the planning/development meetings for the Museum? Y/N

If yes, please comment on how successful you think these were?

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.....

7. Which of the following do you consider to be the most important role(s) for the Age of Fishes Museum?

Please rank their importance from 0 (no importance) to 4 (very important).

Tourist centre	0	1	2	3	4
Scientific facility	0	1	2	3	4
Science communication	0	1	2	3	4
Educational resource	0	1	2	3	4
Job creation	0	1	2	3	4
Revenue raising	0	1	2	3	4
Function centre	0	1	2	3	4
Other (please specify)	0	1	2	3	4

.....

8. Please comment on how successful you think it has been in achieving its goals to date?

.....
.....
.....

9. Which of the following do you consider to be the biggest draw card to Canowindra?

- ☐1 The Age of Fishes Museum
- ☐2 Regional fossil sites
- ☐3 Local wineries
- ☐4 Marti’s Balloon Fiesta
- ☐5 Proximity to nearby tourist destinations (eg Dubbo, Cowra)
- ☐6 Other (please specify)

10. In what ways do you think the Age of Fishes Museum differs from other related museums?

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.....

11. How do you think the future success of the Age of Fishes Museum could be improved?

.....
.....
.....

12. Are you a local of Canowindra? Y/N

(If no, please specify where you are from).....

13. Do you have any tertiary qualifications? Y/N

(If yes, please specify in what field).....

14. Sex:

- ☐ Male
- ☐ Female

15. Age:

16. Do you consent to being interviewed? Y/N

If yes, please indicate your consent by providing your name, contact phone number, and signature below:

Name:

Phone number:

Signature:

Thank you for your assistance. If you would like to provide any further comment please use the space below, or e-mail me at wfinch@pcug.org.au

Additional comments:

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Complete oral history transcript

Mr Bruce Loomes, November 2000

What made you become interested in the Age of Fishes Project?

It was my next door neighbour, actually, who made me be involved because he was new to the area. He came to Canowindra in 1988 and he bought the property next door to me and I was share farming it. And he was very interested in all sorts of activities of the small country town, and the history and so forth, and he knew about some fish fossils he was a little bit interested in. And he wanted to know where they were found and whether I could show him and I did. So it kind of stemmed from 1988.

What was his name?

Bruce Burns. He was a dentist from Sydney and he said one day when we've got time we'll go and you show me where they were and I took him over to the actual site but it was road work and back in 1956 when the things were first discovered. It was done with heavy earth moving equipment and they said it would have to be done the same way again. So he said he'd try and investigate a bit more because he had a dentist practice that was on the opposite corner to the Australian Museum and that took some time to eventuate. And it wasn't until 1993 that it got going properly. In the meantime we'd been over and had a look and Bruce did go over to the Museum and kept in contact with Alex Ritchie and they'd come up and had a look and tried to work out how they'd get a small community town involved.

And anyhow we had discussions and it finished up that we got one of the community service clubs, which was Rotary, to organise a dinner and a guest night, and Alex Ritchie was invited to it, with Bruce Burns organising all that, to talk at Rotary. And they invited the locals and whoever else was interested and it stemmed from there.

What was the town's initial reaction to the find?

Unreal. They were zonked. A lot of them when they found out - in a small country town the grapevine travels fairly fast and they found out there was some scientific work or somebody looking for something. It gets around fairly quickly. Yeah, everybody knew where they were and you know when you go there cold turkey nobody knew anything about them but it didn't take them long until everybody was an expert on where the fossils were. And yeah, the town was really enthusiastic. Because the locals in the street - the shopping section - everybody was sweating on the tourist, you know - there'd be bus loads of tourists and all the little vacant shops would soon be taken up and leased or rented or whatever and people would have their own coffee shops and that sort of thing. And they were waiting for these tourists. They seemed to think that it would all happen overnight, but that's not the way it went.

So that was back in 1993. How do the townsfolk feel now? Did their dreams eventuate?

No. Over a period of time, it's taken some time and yes, a few come in and stuck it out for 12 months, looking for the coach load of tourists to come, and it hasn't eventuated. We've had quite a few coach loads of school children, and the whole idea when it first started was to have it as an educational research centre where the students could learn things and of course they're our next generation and they'd carry it on. We could start it and they could carry on with it. But now in the present day people are still expecting coach loads of people and there's a few of them that have gone and have just said it'll never happen and it's just taking too long.

Has there been any economic benefit to Canowindra? Have the people who leased those places for 12 months stayed, or have they come and gone?

They've come and gone. I think the benefit to Canowindra originally is the actual scientific side of it, or what I should say is the digs that were organised by *Gondwana Dreaming*. That's where the town benefited from back in '93 from day one. When the site was uncovered and Alex finished up getting this 70-odd tonne of rock on over a hundred palettes he looked at it and said: *Oh it'll take me thirty odd years to clean this up!*

And anyway through Monica Yeung and *Gondwana Dreaming* she organised, being a geologist, she knew Alex and they organised these digs where people come up and pay for the privilege of cleaning the fossils up under scientific direction and it's worked pretty well from '93 through to '99 I suppose. The average would be 20-30 people every month coming to Canowindra.

And the hotels were booked, the motels were booked, home hospitality places were booked, and all the service clubs such as the RSL club, the bowling club and the golf club they all benefited from people having meals there. And the service station and the chemist, the newsagent and the bakers - the essential things - they came off fairly well.

So that was about until '98, '99 you reckon?

Yeah, really until we actually finished cleaning up the fossils. 1999 would have been the last really big dig that we've had. And so did the Museum. That was the whole idea of the exercise was for x amount of dollars from these paying people was to go as a donation to the Museum, and that would have been in the vicinity of \$35,000 - \$40,000. That went into the project. And if you really went to the Canowindra people and asked them from the business houses and asked them if they'd made any money they'd just shake their head and say oh no, it was a waste of time. As I said, you've got to pick the actual shops. Like you wouldn't go to a frock shop, unless it was pouring with rain and somebody wanted to buy a pair of gumboots, or a raincoat or something or a hat, but they're not going to have people coming to buy things.

What has your involvement been in the Project?

Well I started back, as I said earlier, in 1988, and we talked about it and it got going in '93 proper and being a local and I only lived two mile away from where the actual site is. Not only that but I was the local fire brigade captain, and it was in my area and of course when it came to a quarry situation with rocks and all that they wanted water and high pressure hoses and all this. So I got asked if the brigade would lend tankers and this sort of stuff. Anyway we sort of got involved from there.

I'm a mad fisherman by heart, and all that, and I thought it was a change, and quite good. And I was born and bred in the area and I could see it was a good thing. And as far as I was concerned, it was probably the only thing Canowindra had got left to create tourism and I thought it would be a really great thing to get behind and try and push it. So we did as much as we could. I mean I was the local Scout leader in Canowindra for 20 years, and I thought: *Oh well, I'll put this last effort into it.* I'd been through Apex, and I didn't feel I was particularly old enough for Rotary, so I thought I'd give this a bit of a go. And yeah, it was good. So that's my involvement until the present day.

Tell me about the fossil casts.

That was a fantastic thing to start with. It was a great idea, but it sort of got knocked on the head because some people in a small country town think that if somebody's going to make a dollar then they shouldn't be, and that you're only in it because you want to get something out of it monetary-wise.

Well that wasn't the case. I got involved in it because Alex Ritchie asked me to and the reason why he asked me was because, after working with me for a while, he found out that I was involved in Scouts and I had experience with fibreglass, cos I'd made canoes and kayaks and things in the Scouts. And he said this would be great. A local here, and we could do it on the spot. We could have somebody here making fibreglass replicas of the actual fish fossils.

And of course that was great for about 12 months until politics and all that sort of thing got involved and some people thought somebody else was going to make a dollar in it.

And so I resigned. I'd been on the Board and Vice Chairman on the Board ever since it started and I resigned because as I say people got their noses out of joint because they thought I was gonna make a quid and I had monetary interests and shouldn't be on the Board as part of the Constitution. Anyway and as they found out and written to Consumer Affairs and Fair Trading and all that and it had nothing to do with it. So it really put a black spot as far as I was concerned. I'd been making stuff and we used to take it around to shows. It went to Sydney, to the Royal Easter Show one year, and it went to field days. It's been down here in Canberra on exhibition. But it got to the point where people just thought it doesn't cost

anything to make them and they were knocking them about and I was starting to get a little bit browned off cos every time someone took a chip off something they'd say: *Oh Loomsey will fix it*. But I wasn't getting any money and to this day I've never ever been paid.

That seems to be a common problem in talking to people, that there's a lot of effort and time being put in by the volunteers, but not a lot of paid staff.

Well back from day one we said volunteers are volunteers – they can be certain things. But nobody likes to be told as a volunteer, especially if you are a volunteer, you don't like to be told all the time what you've got to do and what you haven't got to do. You go there and it's your time and you give it up free. And what makes it really bad is having managers or project officers as they were called when we first started off, being paid. We accepted that for a start, but then some people thought he's supposed to be giving more time than I am, and he's getting paid and that's part of his job, so why is he pushing it off onto me? And it sort of stemmed from there. It's never made enough money to fund itself as far as trying to employ staff, which it should have.

It was opened before it was ready, we were housing it at the old courthouse which was quite good and when we got this grant money and stuff for this new museum they were really keen, some people, not looking to the future, and thought we'd better get it into this new building straight away. Well we weren't ready for the new building and they'd run into problems all the way through with staffing because you can't be called everyday to go and do a volunteer job.

And a lot of tourists just come and go, and you just can't book in on the spot and you just don't feel like going in and volunteering. I'd written a thing, a staffing sheet to the Chairman back in '97, on the way I saw it, having travelled around the country a fair bit and being to other museums. And I'd gotten a great insight into what politics and local councils and volunteers are involved in from the Whaling Museum in Eden. Now it's a classic because everything they've started is exactly the same. They've been involved in it a lot longer than we have. They started off with council involvement and volunteers. Now they don't have the council involved and they've got paying staff and they'd sort of be three years ahead of us and we're following in exactly the same footsteps as they've been through.

So they didn't learn any lessons from the Eden Museum?

No. We'd come back and tell them at the Museum at the Board Meetings that this happened down at Eden and that this is what we're going to run into, and no, they'd just completely ignore it. I guess it's because of me – I'm fairly outspoken, and they say: *What would you know? You haven't been anywhere.*

Back to what your question was, I wrote this thing up about staffing and I said it should have a Manager, preferably who had some scientific knowledge so, you know, things can't be put over the person, and you can't be conned into having something at the museum that isn't necessary. We needed another person which I called an assistant or whatever, who should be just about as qualified as the Manager because the Manager should actually get off his freckle (either he or she) and go and sell the Museum travelling around, and going and buying and begging and doing all sorts of things to promote the Museum. Trying to get exhibits and all that type of stuff, and while he (or she) is away, the second in command could be running the place. And also I put on it we should have two, so that's really four people. There should have been two paying full-time staff or guides. The guides should go through a training course, and they should be given uniforms and they should do the thing proper.

But it never happened. It just sort of went along higgledy piggledy. You know Tom could come in one day, and Bill the next. Half of them would come in with the seat out of their pants and unshaven, and it was very unprofessional. We kept on being told to get professional, but you can't tell people that unless they're getting paid. You can't tell volunteers, put it that way. So it's falling off badly to the present day. You know they've got a job to get volunteers to come out.

I understand that recently you went to Miguasha because there's a fishes museum there. How does that compare and are there any lessons that Canowindra could learn from Miguasha?

I don't know which way to answer this. Miguasha has got the same sort of fossils as we've got. It's a different set up because the actual Museum is right on the site. And the site's on a

cliff face on the river. And their Museum is only open for three or four months each year. So they put something like 50,000 people through in three or four months. And we'd be flat out doing that in a couple of years, I'd say. I don't know exactly what our figures are but they're not that great. If we didn't have the school kids going through...But they've got a great collection. Their fossil fish, most of their stuff is shaly and it's broken up a lot, where our fish fossils are all intact. You know it's all in big solid quartzite rock.

The Museum itself is a one off on its own. It's out in the middle of nowhere, 20 odd kilometres away from the nearest town, and tourists still come to it. It's taken 20 odd years to develop it. It's very professionally done. Marius Arsenault, who is the Director, he started it. He originated it just from a dream, just from a building, just like a shed, and they gradually built it up to what it is today. Didn't get anything really until recently they started to get money from the Quebec government and then they made it into a Park, and then they got recognition that way.

Why I went over there - I was invited by Marius and the Quebec government to go over there to represent Australia, or actually as the Australian Museum representative to go to the ceremony of the World Heritage, because they'd just won a World Heritage Listing. And it was a terrific thing for me, and I went over there, and I'd never been out of the country before, and it opened my eyes up as far as the Museum's concerned and what you could do and what you couldn't do.

But to this day, and that's three or four months ago, I've never ever been asked by any of the Canowindra Committee, the Board, or any of the persons, Council or whatever, what did I think of Miguasha, what could we learn, what could we do. I've never ever been asked. I was asked by two people how my trip went and this is just the way a small country town people think. You know because I went to Miguasha and they didn't. Yeah, there's heaps of lessons. I could tell them a lot about what we should be doing, shouldn't be doing, haven't done.

How do you see the future of the project? Is it heading in the direction that was first envisaged?

If you give it twenty odd years it might get there, but no, it's very disappointing because originally Dr Alex Ritchie had the vision of a world class fish fossil museum, The Age of Fishes. And it was to be the only Age of Fishes Museum in Australia and virtually in the Southern Hemisphere that actually displayed the uniqueness of the Canowindra fish find. It's so unique because there's that many of them, but because it wouldn't show anything else. At the moment we're putting little bits of dinosaur and gawd knows what else we're putting in it but it's not the same.

It's lost the vision. Somewhere along the line we've been very unfortunate. The first original project officer had great visions. He knew what it should look like. He was a manager, he was a bit of a computer expert as well. He did all our business plans, our strategic plans, and all that back in '93 when he started. And from then on he was here for two years, he was contracted for three, I think it was, but the last three months of his contract, he pulled out of it because he could not stand any more of the political crap that was being dished out to him and so forth. And things that should have been done weren't being done. So he retired short of his time.

The second project officer... came out of a real estate agent and had no idea of a museum or whatever. Then we had another bloke who used to work for a bank. What he did was he went around different branches where a branch or bank was having trouble with personnel like staff, he would go around and hire or fire them. That was his job, I think... We had him for two years and he did all right out of it. Not only did he get a wage, but they also taught him how to use a computer so he could get a job elsewhere...

And now we've got ... a young chap who's doing a PhD in Brisbane... What we really wanted was a manager, a manager who would not do the scientific stuff, but a manager who could raise money and do the PR stuff and manage the place. We've got the Australian Museum who can do all the scientific stuff, and the other people who do all the research we need, but it still comes back to politics again. We're limited in what we can and can't do. If Council don't like something they say, you know, it would be in the best interest of the

committee to do such and such, and sway the committee that way. And where it's going to end up I don't really know. I can see that it's going to be a - it won't be a disaster because council won't let it - there'll be egg on their face if it does, which is a good thing probably. But it's very disappointing because of all the political stuff that's going on.

Dr Alex Ritchie resigned from the project in 2000 and it's been quoted and reported and written up everywhere that he retired. He never retired. He's still really keen about the whole scientific side of the project, still mad keen on the Canowindra fishes. He still hasn't written up his paper on the *Groenlandaspis*, which was his favourite fish. He just couldn't put up with any more of the political crap that was going on.

I believe that it should have been a trust and not a committee - well it shouldn't have been a committee like we've got with the council involved in it. Councils don't work real well anywhere. We were told this back in '95. Marti's Balloon Festival was on. We have a big balloon festival in Canowindra and Dick Smith came up - we'd been looking for people...Marti's balloon festival was started off by a local fellow who was here, but later moved to the Jersey Islands. He's recently passed on, but it was his brainchild to have this balloon festival and of course that got Dick Smith and Uncle Pete's Toys and quite a few other people with plenty of money to come up to Canowindra and push. And Alex is a fantastic person PR wise, cause he can talk the legs off an iron pot when he gets going, you know. And so he finally got Dick Smith to come and have a look at the rocks and we got talking and I was fortunate because I'd been in the actual dig. I was involved in the dig from '93 when it first started, and followed them all the way through. I know every rock that's on every palette virtually, and what fish are on and not on them. Sometimes I can even show the scientists things that they haven't seen.

But anyway we were talking there in the group and he looked at me and he just said: *How's council going? Is council involved?* And I said yeah, and he just looked at me and said: *Oh well, the best of luck!* And that was it. He virtually walked off and left us to it. From that day on, we've never been able to get private or corporate monies because they're frightened of councils...

We've had several thousand dollars from James Fairfax. But that wasn't donated to council.

Most of the people who are game enough to give money to the project won't give it to the Age of Fishes - they give it to the scientific research part, handled by the Australian Museum.

Up until last year we've had to draw up what we call a Memorandum of Understanding and a Collection Management Policy to make sure that everybody is involved. So there's three stakeholders and they're supposed to all have equal parts: The Age of Fishes Museum Committee (or Board, as they like to call it); we've got Cabonne Council, and we've got the Australian Museum. For some unknown reason it seems to be still just Cabonne Council and the Age of Fishes Board. Executive of the Board too, I should mention, always something to do with the Executive. Some of the stuff that comes through doesn't get passed by the full Board. Up until we've had a change in this year, 2000, we've had a change of new president and a couple of other people who have gone out of it. They used to have a little street talk and that's when it, you know, things seem to have got done. And the rest of the Board were completely ignored...

Do you think if they had a strategic plan it would focus them on where they are heading and be an improved way of getting funds?

Yep. They should have had that when Frank Connor started. The strategic plan and the business plan and all that should have been done since day one. And they should have had that all organised and said ok, now this is the five-year plan or three-year plan. This is what we've got to do, this is what we've got to expect, the number of tourists that are coming in, the amount of dollars we're going to get. If it doesn't work you go through it and revise it in another three years' time.

And then right down the end of the track, as we said probably 20 or 30 or 40 years time in our life time, my lifetime and yours, in about 20 odd years we said ok if we ever make enough money this building's going to be in three stages. And if we ever get enough money the finale of the project will be to have an on the site viewing building plus facilities to store the stuff plus it would be open to the students. And it would be a working site, and that was the vision. But that seems to be all just lost.

They just seem to plug along from day to day. Each night, I think, when the doors shut they say: *We only made forty dollars today, or we only made twenty dollars – it'll be better tomorrow.* So without the vision plans, the strategic plans, we're up a gum tree. As I said to them in the thing I had written, about the staffing, I said we're like a ship without a captain. You know, we've got this ship that's capable we're wandering around in the sea, we don't know exactly where we're going. We've got a rough idea where we've got to go, but we don't know how we're going to get there and we're just wandering around. And we just need a good captain to steer it and put it in the right direction.

Is the rest of the community feeling the same frustration?

Yeah. They are. They're gradually falling out, which is bad. A lot of businesses just look at you and shake their heads. And you go there today and blokes'll just say: *Oh it's going along now a bit, how much further is it going to go?* and you just say: *It's all depending on government grants.* So far as the corporate sector and as I've said, whilst a council's involved in it they've got no hope of getting money from corporate people.

Is that because the Council's got other priorities other than a scientific find?

Yeah, councils are only interested in money, in dollars, you know. They're not interested in a scientific site. They pay people to find all that out for them. You know, if the project's going all right they just say: *Oh yeah, they're doing a good job.* But they really forget, Cabonne Council is a fairly big area and Canowindra is the biggest town in it and they forget that, ok this fossil find is a world significant find and it could be pushed if they really got behind it could be the best thing in Cabonne... And that's where I reckon a trust would be better. If we could have got a trust that would have been to our advantage well and truly, and we'd have got a lot of corporate money.

Is it too far down the track now to establish a trust?

It is now because they've drawn up this Memorandum of Understanding. They've been blocking it from the start. We had one particular night where we said, ok let's be a trust. Anyhow it was organised to have a solicitor come and talk to us about the trust and the do's

and the don'ts and the goods and the nots. Anyway it so happened that the girl that came down worked for a solicitor for about 18 months. She was 18, and she told us all about trusts – the *bad* things about a trust. She never said one good thing, and she'd been baited up and that just browned everybody off. *Gees, we're not going to form a trust if that's going to happen.* And that's what happens with councils and small towns...No matter what you say or write down, they've got a habit of twisting it somehow. It comes around and looks different.

Oh, and the land was another thing too. That was a real sore point with me because we'd gone back in '93 for the actual site – where would we like it? And that was a big decision. Were we going to have it out at the site where the fossils were found, or were we going to have it in Canowindra. And we ummed and aahed and ummed and aahed and of course we knew about Miguasha, and the site was the place to have it. But the logistics of it all was having it on site we had no power, no water, it's 12 kilometres out of town and it's on a little old dirt road. How the hell are we going to get people out there? So, ok, now to run it properly we need to put a building out there for somebody to live in, which probably would have cost us \$100,000. We had to put the water on, the electricity on, and then we've got to guarantee we'll get the people out there, so we'd have been up for probably a couple of hundred thousand dollars to start it out there.

So we thought about it and we thought if it's in town somebody who's going to manage it or run it will already have a house in town. We won't have to worry about if they've got their own accommodation, the power's there, the water's there, all the infrastructure's there, and it's right on the main drag between Cowra and Dubbo and Wellington or Orange and from the Japanese Gardens through. It's a logistical place to have it, somewhere in town. So the State Rail Authority had two little blocks of ground that we decided that we'd like, so we had meetings in '93 with the State Rail people and they were gifting the two parcels of land over to us. They valued it at \$15,000 each. But after a little period of time we thought we were all set. I was on that part of the committee to look after the Rail land. Council said they'd do all the paper work for you and everything, but anyway after a while we all sort of got ignored and it went on and on and on. It finished up they wanted \$25,000 for the land, they weren't going to give it to us. State Rail said originally they'd grant it to us. They'd put a value of \$15,000 on it, as I've just said, just to make it look good in the books, that they'd

gifted over \$30,000. And it got to the point then where they said: *Well which block of land do you want?* And we were going to have one block of land for the building, and the other as a car park, on the other side of the railway line. But anyway it turned out we could only get one block and it was going to cost us. They wanted \$25,000 in their hand for the block of ground.

And so Council did all the work for it, did all the paperwork, and anyhow the mayor says to hurry things through and all that we'll let the Council do it and then it's only a paper job to get it changed over to the Age of Fishes. And we thought this would be great, as we'd have a piece of dirt, a bit of security, or something we can borrow money on. Anyway in the Memorandum of Understanding and everything else it's written in that Council owns the land, so it looks like we lost it.

So if Council owns the land, who owns the fossils?

Well the people own the fossils, I've argued from day one. Council said that they owned them and I said that they didn't bloody own them they belong to the people. Even where your own house is, you only own probably an inch or half an inch of the top of it. You've got a mining lease over it already. You know if they find minerals underneath it they can pay you out or do whatever they want. They own what's underneath the surface. We had that sort of out with them when we were digging it. They brought mines people on, and the bloke came along. I was involved in that too. He came along, head fella from Orange, and said: *It's not a quarry and you're not working it like a quarry, so we can't say that it's a mine and we're not really interested in it. There's no minerals in there that are of any benefit to us and they're only fossils. Fossils aren't any good to us - it's not oil-bearing fossil or anything like that. It's only fish fossils and so it's not a mine, and we're not interested. Go for it.*

But because it's on Council land, it was a main road, and then a lot of the main roads got handed back to council, the taxpayer really owns the Council and of course Council reckon they own it so do the people own it, or who? So as it turns out, it's not a heritage thing but it's a national treasure. The fossils belong to the people of Australia, they belong to the world. They're not there for monetary gains. Council just can't say: *I've got all these fossils and I'm gonna sell them*, because they don't own them. They belong to the people. The

people are going to have a say in whether they're going to sell them or not. So what do the people say? *Put them in a bloody Museum where everybody can see them.*

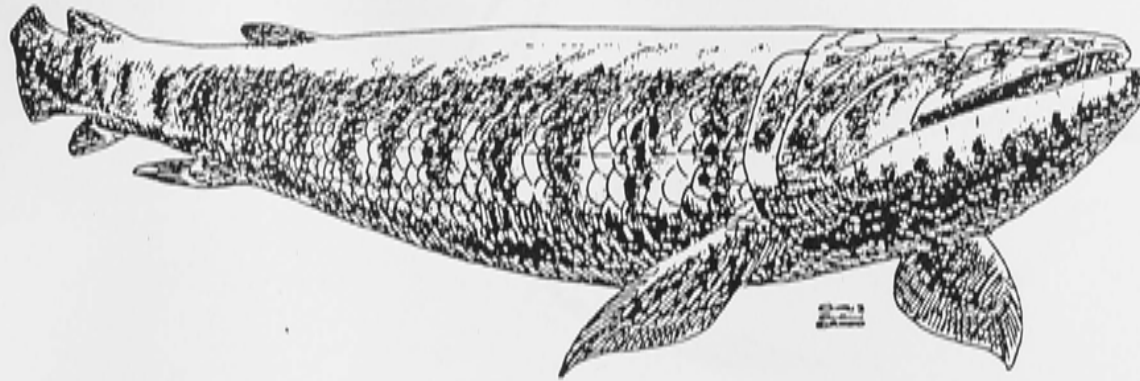
As it turns out the Australian Museum, because they were involved (I suppose if it was another museum they'd be the same way). Anything that's scientific wise, and it's new, and it's rare, I suppose or a find like that they put their numbers on it because it's to go into exhibits for the world to see. The Australian Museum puts numbers on them... You see the rocks themselves are nothing, until the scientists get hold of them. If it's got something to value as far as the scientific side goes, or if it's got something special about it and you get a scientist or somebody who's done a PhD or something or other and they write up about it, and say they've got a book on it, until that happens it's just a rock. A rock's a rock. But if it's been written up and it's something special, that's the significance about it. Like most of the stuff that we've got has been written up, and it's for the world. It's where people can come, scientists from all over the world and that was the whole idea of the project in the start - for other scientists and students to come and work on the actual fossils... So, yeah, who owns the fossils?

Gooloogongia loomesi

Pronunciation: Goo-loo-gong-ee-a loo-ms-i

Translation: "Loomes' Gooloogong" – named after Bruce Loomes, the foreman of the 1993 excavation of the Canowindra site, and the town of Gooloogong, NSW.

Period: Late Devonian (360 million years ago)



Description: Large carnivorous lobe-finned fish

Class – Osteichthyes ('bony fish')

Subclass – Sarcopterygii ('fleshy-fins')

Superorder – Crossopterygii (lobe-finned fishes)

Family – Rhizodontidae ('rooted-tooth')

Genus – *Gooloogongia*

Species – *Gooloogongia loomesi*

Length – 90 cm

Gooloogongia is the fourth species of lobe-finned fish described from the Canowindra site. It was named by Dr Zerina Johanson and Dr Per Ahlberg in 1998. It is rare at Canowindra, being known from only 3 specimens, and is an early member of the rhizodont family. Rhizodonts take their name from the strongly rooted teeth in the jaw, and some members were huge predators reaching over 6 metres in length. *Gooloogongia* is the most complete rhizodont yet to be found anywhere in the world.

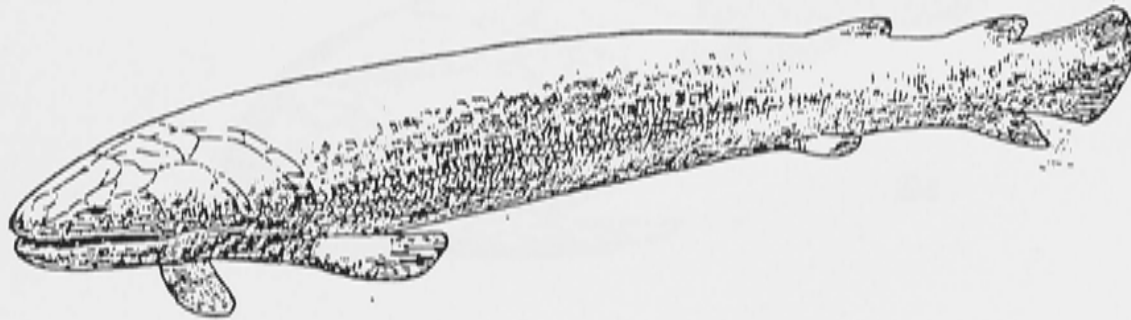
In general size and shape *Gooloogongia* is similar to the modern, and completely unrelated, saratoga which lives in the tropical rivers of northern Australia. Saratoga can be aggressive feeders, and take a broad diet of fish, insects, and other animals. Whether *Gooloogongia* had a similarly broad diet is unknown. Like other lobe-finned fishes, *Gooloogongia* had two rows of teeth in the jaw; an outer row of small teeth, and an inner row of larger fangs. The fangs of *Gooloogongia* are sharp and needle-like, but they were probably not strong enough to penetrate the armour plating of the small placoderms that also lived in the Canowindra fish community.

Cabonnichthys burnsi

Pronunciation: Cab-on-ik-this burnsi

Translation: "Burns' Cabonne fish" – named after Bruce Burns, who instigated the 1993 excavation of the Canowindra site, and Cabonne Shire Council, who provided help during the excavation.

Period: Late Devonian (360 million years ago)



Description: Medium sized carnivorous lobe-finned fish

Class – Osteichthyes ('bony fish')

Subclass – Sarcopterygii ('fleshy-fins')

Superorder – Crossopterygii (lobe-finned fishes)

Order – Osteolepiformes ('bony scaled forms')

Family – Tristichopteridae

Genus – *Cabonnichthys*

Species – *Cabonnichthys burnsi*

Length – 70 cms

The second tristichopterid described from the Canowindra site, *Cabonnichthys* was named by Dr Per Ahlberg and Dr Zerina Johanson in 1997. More than 10 specimens have been found so far. Like its larger 'cousin' *Mandageria*, *Cabonnichthys* has a strong jaw with two rows of teeth. The outer row were small, but the inner row were large fangs that produced a strong interlocking bite at the front of the jaw. The tooth arrangement and the shape of the fangs themselves are similar to the dental weaponry of large carnivorous reptiles such as crocodiles. It is possible that like crocodiles, *Cabonnichthys* was able to handle prey that were quite large relative to its own body size.

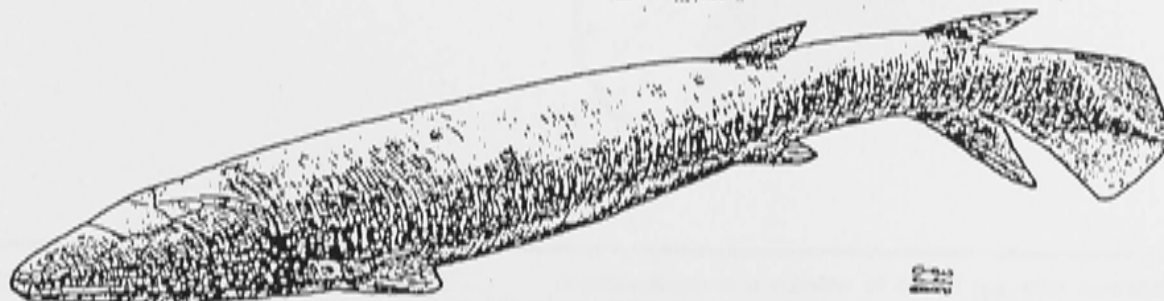
Predators of large prey often display aggressive behaviour patterns, and it is possible that *Cabonnichthys* had a temperament that belied its modest size.

Mandageria fairfaxi

Pronunciation: Man-daj-ee-ree-a fair-fax-i

Translation: "Fairfax's Mandagery" – named after the philanthropist James Fairfax, and the Mandagery Sandstone formation in which the fossils were found.

Period: Late Devonian (360 million years ago)



Description: Large carnivorous lobe-finned fish

Class – Osteichthyes ('bony fish')

Subclass – Sarcopterygii ('fleshy-fins')

Superorder – Crossopterygii (lobe-finned fishes)

Order – Osteolepiformes ('bony scaled forms')

Family – Tristichopteridae

Genus – *Mandageria*

Species – *Mandageria fairfaxi*

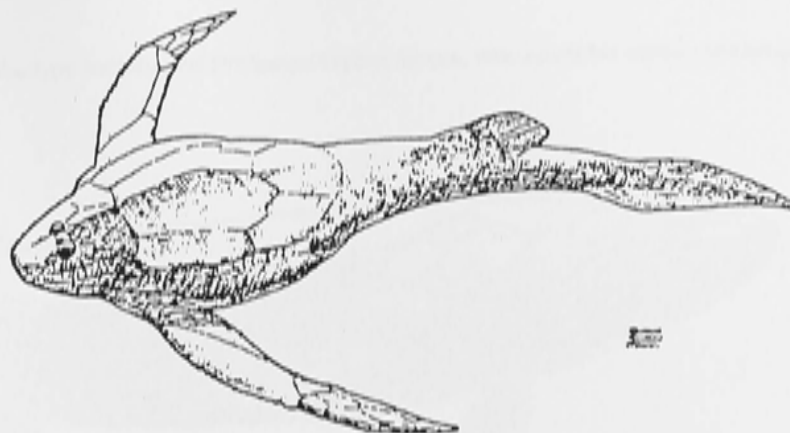
Length – 1.6 metres to 1.9 metres

Mandageria is the largest fish known from the Canowindra site. The 13 or so specimens known so far were found in 1993 and were described and named by Dr Zerina Johanson of the Australian Museum together with Dr Per Ahlberg in 1997. Nearly 2 metres long, it was the top predator in the Canowindra fish community, and the long, torpedo-shaped body with the large tail fins superficially resembles the quite unrelated, pike of today. Large pike are very agile, and catch their prey by ambushing it – the long body-form is particularly good for rapid acceleration – and it is likely that *Mandageria* would have hunted in a similar way.

In sarcopterygian fishes the bones of the upper fins are equivalent to the limb bones of tetrapods, and allowed the fish to manoeuvre precisely in the water using a sculling action of the 'fleshy' fins. The large pectoral fins of *Mandageria* would have helped it manoeuvre around submerged logs when preparing to attack its prey. The large skull had robust, powerful jaws which were lined with a series of large fangs.

Bothriolepis yeungae

Pronunciation: Both-ree-oh-lee-pis young-ee
Translation: "Yeung's pitted scale" – named after Monica Yeung of Canberra, who helped to organise the preparation of the Canowindra fossils, and the pitted ornamentation of the bony plates.
Period: Late Devonian (360 million years ago)



Description – small mud-eating armoured fish

Class – Placodermi ('plated-skin' – the armoured fishes)
Order – Antiarchi (armoured pectoral fins)
Family – Bothriolepidae ('the family of Bothriolepis')
Genus – Bothriolepis
Species – Bothriolepis yeungae

Length – 50 cm

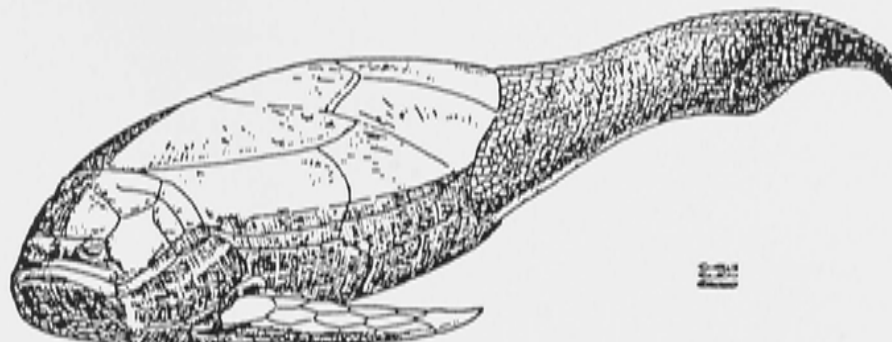
Bothriolepis was the most successful of all the placoderms. There are more than 100 different species known, and the genus is found on every continent. It seems to have spent most of its life in fresh-water rivers and lakes, as most fossils are found in fresh-water sediments, but must have been able to tolerate salt-water as well – how else could they have spread so widely?

Bothriolepis yeungae is the species found at Canowindra, and more than 1500 specimens have been counted so far – it was a very common fish in Canowindra's ancient lake. The structure of the mouth suggests that *Bothriolepis* fed on algae and other micro-organisms living on the bottom surface of the lake. The long, stiff fins may have provided enough hydro-dynamic lift for the animal to 'take-off' from the lake-bottom and regularly swim in mid water. The heavy bony armour would probably have caused *Bothriolepis* to start to sink as soon as it stopped swimming, but provided good protection from the lake's predatory fish.

Superficially, small placoderms like *Bothriolepis* resemble some of the modern 'armoured' cat-fishes from South America. These bottom-dwelling catfish live on nutrient rich muds and algae, but the resemblance is indeed superficial. Placoderms are completely extinct, whilst catfishes are specialised bony fishes. The resemblance is probably the result of a similarity in ecology and life-style.

Remigolepis walkeri

Pronunciation: Remi-go-lee-pis walker-i
Translation: "Walker's oar-scale" – named after Kevin Walker, founding chairman of the Age of Fishes Museum, and the short oar-like pectoral fin.
Period: Late Devonian (360 million years ago)



Description – small mud-eating armoured fish

Class – Placodermi ('plated-skin' – the armoured fishes)
Order – Antiarchi (armoured pectoral fins)
Family – Remigolepidae ('the family of Remigolepis')
Genus – Remigolepis
Species – Remigolepis walkeri

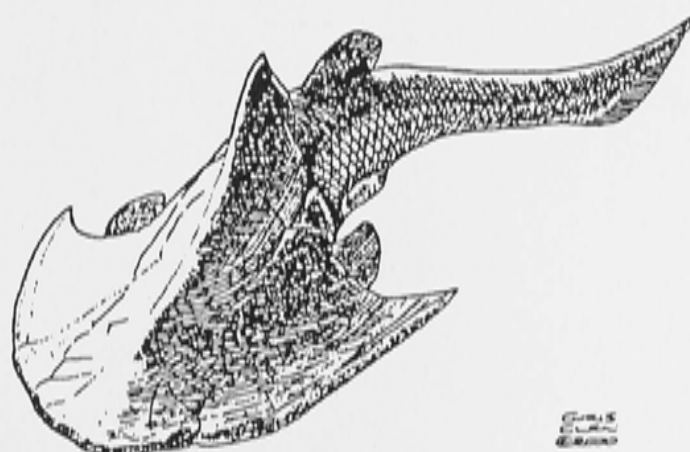
Length – 35 cm

Worldwide, *Remigolepis* is not quite as common as *Bothriolepis*, but different species are known from Devonian rocks in China, Greenland, Russia, and at least three sites in Australia. In contrast to *Bothriolepis* the pectoral fin is quite short, and *Remigolepis* may not have been as effective a swimmer as *Bothriolepis*.

Remigolepis walkeri is very common at Canowindra – more than 1500 specimens have been found so far. The high quality of preservation at the Canowindra site, and the large quantity of individual specimens, mean that the Canowindra species is one of the most thoroughly studied antiarchs.

Groenlandaspis sp.

Pronunciation: Green-land-as-pis
"undescribed species of 'Greenland-shield'" – named after Greenland, where it was first discovered
Period: Late Devonian (360 million years ago)



Description: small to medium sized armoured fish.

Class – Placodermi ('plated-skin' – the armoured fishes)
Order – Arthrodira ('jointed-neck')
Genus – Groenlandaspis
Species – Groenlandaspis sp.

Length – 50 cms

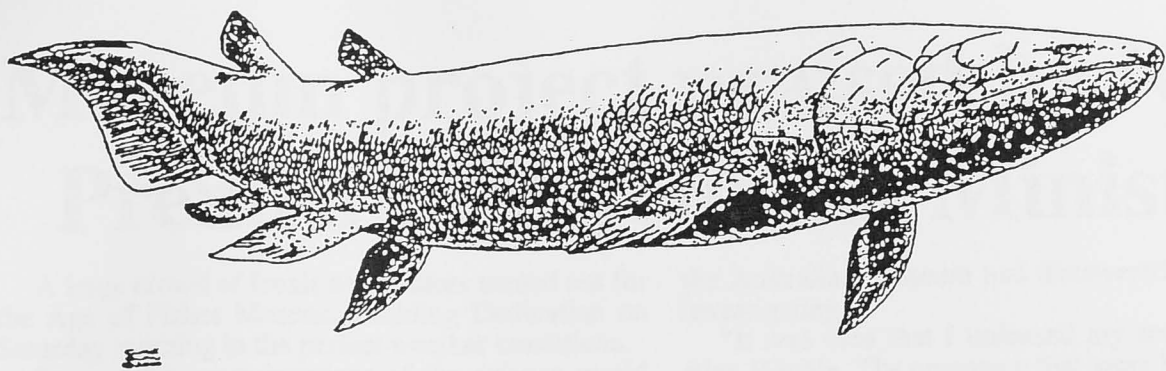
Groenlandaspis is a member of one of the most successful placoderm groups, the arthrodiras. Arthrodiras are well represented by some spectacular fossils from Gogo, W.A., and include some of the first giant predators to swim in the oceans – *Dunkleosteus*, from North America, which was more than 6 metres long.

Groenlandaspis itself was found in Greenland in the 1930s, and has since been found on six continents. Despite this widespread distribution few good specimens were known, and it was the realisation during the 1980s that the Canowindra site probably held good *Groenlandaspis* material (there are two isolated *Groenlandaspis* plates present on the first slab from Canowindra which was found in 1956) which led to efforts by Dr Alex Ritchie to re-locate the Canowindra site during the 1980s and early 1990s.

The 1993 excavation at Canowindra has resulted in the discovery of at least 70 well preserved specimens of *Groenlandaspis* which are the best examples of *Groenlandaspis* known from anywhere in the world. The species at Canowindra is probably a new species, and is under study by Dr Ritchie. Until it is formally named it is identified as *Groenlandaspis* sp.

Canowindra grossi

Pronunciation: Ca-noun-dra gros-si
Translation: "Gross's Canowindra" – named after the type locality and Professor Walter Gross, who spent his career studying lobe-finned fishes.
Period: Late Devonian (360 million years ago)



Description: Small carnivorous lobe-finned fish

Class – Osteichthyes ('bony fish')
Subclass – Sarcopterygii ('fleshy-fins')
Superorder – Crossopterygii (lobe-finned fishes)
Order – Osteolepiformes ('bony scaled forms')
Family – Canowindridae (Canowindra fishes)
Genus – *Canowindra*
Species – *Canowindra grossi*

Length – 50 cm

Discovered at Canowindra, NSW in 1956. The only known specimen lies in the middle of a large sandstone slab and is surrounded by more than 100 smaller placoderm fishes. The specimen was studied and named by Professor Keith Thomson in 1976. *Canowindra grossi* is distantly related to some lobe-finned fishes known from the Northern Hemisphere, but is different enough to be placed in its own family. Its closest relatives are fossil fishes found in Victoria and Antarctica. Since 1956 more than 3,000 additional fish specimens have been recovered from the Canowindra site, but no additional specimens of *Canowindra grossi* have been found.

As with most other osteolepiforms, the head is 'reptilian' in appearance. The scales are reinforced with bone, and *Canowindra grossi* was able to breathe air using a lung or lungs; the air was drawn in through a fully developed nasal system. This complemented the gill system, allowing the fish to take up oxygen from the air or the water – this feature regularly occurs in fishes living in tropical fresh water systems. The air in the lung/s would have helped *Canowindra* to control its buoyancy in the water.

Museum project praised by NSW Premier and Tourism Minister

A huge crowd of locals and visitors turned out for the Age of Fishes Museum Building Dedication on Saturday morning in the perfect weather conditions.

Two of the representatives of the science world had travelled half way round the world for the dedication, namely Oxford University Museum Professor Keith Thompson and Director of the Museum of Natural History in Quebec Dr Marius Arsenault.

Mayor of Cabonne John Farr paid tribute to all the local councils who have helped make the Age of Fishes project a reality, councils including Cowra, Parkes, Blayney, Cabonne, and Central Tablelands Water who have all contributed financially to the project.

Member for Calare Peter Andren congratulated all who were involved in the project for developing an excellent teaching aid and tourism and educational venture.

"Today we only see the beginnings of this project, and dream for completion," Mr Andren said.

Federal Minister for Sports and Tourism, Jackie Kelly told of how a museum like this brings history and science to life.

"The fact that this project is supported by the whole region, it is a regional commitment, this is why the government has helped fund the project.

"I wish you luck, this project has a huge potential, and a job creating future.

"Fifty per cent of all new jobs are in the tourism sector, this is where the biggest job prospects are," Ms Kelly said.

The man who named the fish which has made Canowindra famous, the Canowindra grossi, Professor Keith Thompson from Oxford University, congratulated Museum Manager Colin McHenry on the success of the day.

"It was a series of chance events that brings me here today, and I take no credit for today.

"I was invited to work on this piece of rock after

the Australian Museum had discovered it was worth investigating.

"It was then that I unleashed my secret weapon - Alex Ritchie. The resources that were here that were not being worked on was extraordinary.

"As Canowindra has this unique resource there will be no museum like this in the world.

"It took a tremendous amount of vision and imagination to get to this stage and Alex had the drive to do it.

"To make a museum successful you need the support of the community, and you have this here, and a group of incredible hard working volunteers.

"This is not the museum, there is still a lot more to be done and when this is done then it will be fantastic," Mr Thompson said.

Premier of NSW, Bob Carr congratulated Canowindra on their magnificent main street before discussing the museum.

He then went on to say that the museum is an investment by this generation that will reap giant returns for the next generation.

Mr Carr also announced the museum will be hosting the first international conference to be held in regional NSW in April 2001.

The Vertebrate Palaeontology of Gondwana conference will attract more than 150 delegates from all over the world, pumping \$330,000 into the local economy.

"The museum is the way to get young minds shooting forward with this exciting educational resource.

"This is an example of what can be achieved with a partnership between local, state and federal forces.

"The project has given security to small businesses in the town," Mr Carr said.

"We are pushing to have more of the arts budget spent in regional NSW, and this is one example of it.



SUNDAY TELEGRAPH, APRIL 1, 1956

BESIDE A N.S.W. BUSH ROAD . . .

He found a fish 350,000,000 years old

THE driver of the bulldozer wiped his brow and took a second look at a huge piece of quartzite which had slaked off from the road level.

He had been leveling a dangerous curve on the Goolagong Road near Canowindra, 200 miles west of Sydney.

As he looked down from his cabin he could see the unmistakable impression of a fish-like creature, about 15 inches long, centred in the rock.

When he looked closer he could see other smaller impressions in the rock, some of them clearly showing tiny scales and what looked like armored joints.

"Might be of interest," he thought as he shovelled the slab carefully to the side of the road, where it remained for 12 months before its importance was realised.

Had that driver hopped on a magic carpet and travelled back through

time it would have taken him 350,000,000 years to reach the period when the fossil was alive.

As his carpet came to a stop he would have found the climate tropically hot and sticky.

He would also have discovered the Devonian Sea of that remote geological period covering large areas of New South Wales, including the Parkes-Forbes-Canowindra districts.

In the sea bottom moving over the fine sand he would have seen his fossil fish, a ganoid, in search of food.

Nearby he would have seen a number of small placoderms—primitive, armor-plated fish—moving sluggishly or resting on the bottom.

The placoderms had

By **PETER HASTINGS**

rather primitive jaws—an advance over their predecessors of the Silurian age who had no jaws at all—which opened up new scope for fish forms in more active, wider ranging life.

Their head and gill regions were covered by a bony shield made up of plates and a ring of armor also sheathed their body. Their tail was left naked.

Their natural enemies were the Eurypterids—giant, voracious 11ft. water scorpions.

In the "struggle for existence" the placoderms and ganoids died out as more efficient, better adapted fish forms took their place.

Just how did the Canowindra ganoid and

placoderms die? Sydney Museum's Curator of Fossils, Mr. H. O. Fletcher has two guesses.

The first is that a nearby volcano showered the seas with poisonous matter, which killed them.

The second and more probable guess is that the ganoid and placoderms were caught with many other fish in a rapidly drying river estuary.

They died on the fine sandy bottom of the estuary. Soon after prolonged rain or volcanic action covered the sand with mud.

UNDER the tremendous processes of weathering, during baking aeons of heat, through millennia of ice ages, and in the vast buckling of the earth's surface, the fine sand hardened into quartzite.

The quartzite carried with it the indelible impression of the ancient life forms which had once died on a sea bottom.

Just how do scientists estimate the age of fossils? The answer is from the record of the rocks. Fossils are as old as the rocks containing them.

Early geologists ingeniously deduced the age of rocks from their knowledge of the rate of sedimentation. Thus if it took so long for an inch of sand

to harden how long would it take for a 7000ft. layer of sand to harden into rock?

The answers they arrived at frequently astonished them. Actually they were being conservative.

Modern radioactive and fluorine tests prove the earth to be older than early geologists thought.

You might wonder how "old" is 350,000,000 years. Geologically it is not considered remote antiquity even though it is a quite unimaginable period of time.

The earth is generally considered now to be 3,000,000,000 years old—to have come into existence as a spinning ball of flame thrown off by its parent sun.

In the early Cambrian period—700,000,000 years ago—complicated forms of life in the hundreds were already in existence.

So complicated and highly organised was life in the Cambrian period that scientists think life must have been evolving for some 700,000,000 years before that.

Thus, say the scientists, life has been evolving on

A SYDNEY MUSEUM ASSISTANT points to eye holes in a latex impression of fossil remains of a 350,000,000-year-old ganoid fish.



GANOID



PLACODERM

earth for about 1,500,000,000 years.

This makes the 350,000,000-year-old ganoid and placoderms of Canowindra "fairly recent" inhabitants of the earth.

And yet the ganoid and placoderms are incredibly ancient compared with man, who—even in his most primitive sub-forms

—has been on earth much less than 1,000,000 years.

The Canowindra fossils remained on the slab for 12 months before Mr. A. Embling and I

of nearby Holmwood-

He rang Mr. H. Fletcher, who went to site, examined the fossil and brought back the rock slab containing it.

In Sydney Museum assistants chipped the fossils away from the slab and took latex casts of them.

"You see," Mr. Fletcher said last week in his book-lined office at Museum, "this is a highly important find as the slab contains the first unimpaired impression of placoderms found in this country."

Last week the latex casts were airfreighted to the world's leading expert on placoderms—Dr. M. White, of the British Museum in London.

Mr. Fletcher said Dr. White would send airmail back a preliminary report of his studies of the fossils to the Sydney Museum.

"I hope," added Fletcher, "that he finds them as interesting as I do."

Sunday Telegraph, 1 April 1956



□ Original fossil enthusiast and vice chairman of the Age of Fishes management committee, Bruce Loomes (at back) and committee chairman, Kevin Walker at the site.

Fossil fish bring business boom

CANOWINDRA is well on the way to developing a tourist site as significant as the Western Plains Zoo at Dubbo.

It won't be too long before the internationally significant Late Devonian fish fossils, re-found at Canowindra in 1992 and known locally as the Canowindra Age of Fishes, will be housed in a world class museum in town, while the actual site where the fossils come from will be developed to provide a properly protected viewing area.

The Age of Fishes Management Committee has now formed an incorporated group and it is in the advanced stages of acquiring a site within Canowindra's central business district.

Chairman of the committee, Kevin Walker said the concept of the museum was interesting in itself.

"The Australian Museum's paleontologist, Dr Alex Ritchie, would

like to see the pond where all the fish were originally killed recreated at the museum to give people a really good idea of how things happened," Mr Walker said.

In conjunction with the museum, the group has plans to build accommodation to be used by school groups and people working on the fossils.

"The amount of interest ever since the fossil find was made has just been incredible so I think when we have been able to develop facilities to cater properly for tourists and interested groups that it will be a huge boon to the town of Canowindra," Mr Walker said.

"Only just recently we have had visitors from Canada come and have a look and there is always interested people coming through especially to see the fossils."

By FRIER BENTLEY

Fossils gain international recognition

AS work continues on the building of the new Age of Fishes museum and volunteers continue to give visitors a glimpse back in time, the Canowindra fossils themselves are gaining an international recognition.

The Canowindra Fossils have been featured in scientific papers published by researcher Dr Zerina Johanson and Dr Per Ahlberg and have now been given official scientific names.

The largest and most spectacular of the fossils so far discovered, that of a 1.6 metre grey fish, has been officially named in print as the Mandagaria fairfaxi.

It is one of four fish to be so far detailed in scientific literature.

It is named after the Mandagery sandstone in which the fishes were found and James Fairfax who provided a research grant for a thesis.

Also formally named is the Cabonichthys burnsi or Burns' Cabonne fish which was described in the December 1997 issue of the Journal of Vertebrate Palaeontology and the Canowindra grossi which was first described in 1993.

The Mandagaria fairfaxi is no doubt a forerunner of several other



Age of Fishes Museum volunteer Anne Barwood says there is a continuous stream of visitors through the museum.

scientific firsts as Dr Johanson and Dr Per Ahlberg will present a series of scientific papers in the next year describing other new Canowindra fishes.

Dr Johanson said the next of these, describing a fourth fish, had been accepted for publication in the prestigious international science journal,

Nature.

Such papers appearing in leading international journals in the US, UK and Australia will set the foundations on which Canowindra's international reputation will rest.

The Mandagaria fairfaxi and others of the Canowindra fish family lived about 360 million years ago.

Central Western Daily, 8 June 1998

Fossil trail considered

By MARK FILMER

THE development of a natural history trail linking many of the region's outstanding tourism exhibits is in the embryonic stages of planning.

The trail could link exhibits such as Jenolan Caves, the Somerville Collection in Bathurst, Canowindra's Age of Fishes Museum, the Wellington Caves, the Western Plains Zoo and the National Dinosaur

Museum in Canberra.

The idea has been discussed informally by representatives of some of these exhibits and has received tentative support.

However, no formal discussions have taken place.

Age of Fishes Museum manager Mr Colin McHenry believes a natural history trail could boost visitor numbers by linking thematically-similar but unique

attractions throughout the region.

Each attraction would provide a different tourism experience, but contribute to an overall package for visitors.

He said that although no trail had been planned at this stage, many natural history attractions such as the Age of Fishes Museum were keen to explore the idea and its potential.

Mr Steve DeLapp, managing-director of Tourism Leisure Con-

cepts, is completing a study on regional tourism strategies on behalf of Tourism NSW.

The study emphasises the importance of attractions getting together and becoming involved in joint marketing programs.

"There are a huge number of attractions out there in NSW competing for visitors," Mr DeLapp said.

"Being able to package a series of attractions such as a heritage

trail or a food and wine trail is becoming increasingly important.

"This helps present a unified presence to the (tourism) market.

"A lot of attractions that might be too small to embark on a large marketing campaign can benefit significantly by being part of a joint marketing program," Mr DeLapp said.

The Australian Museum, which has strong links with Bathurst's Somerville Collection and Canowindra's Age of Fishes Museum, is also keen to explore the potential of a natural history trail.

Grant for museum sculpture

The Age of Fishes Museum have recently received a grant for a sculpture project.

The funds for this project have been made available through the ArtStart program; an initiative which encourages youth to learn and develop skills within the creative arts field.

Entitled The 'Metal Fish Sculpture Project', artists, members of the community and school students are combining skills to construct four metal fish sculptures in May.

The sculptures will be constructed out of scrap-metal donated by the farming community and whatever the artistic team can find from the local tips.

Artist Ralph Tikerpae from West Wylong, along with Canowindra High School teachers Mark Edwards and Tony Dagg will be assisting a

Scrap metal needed

group of students from the High School to construct the sculptures.

A prototype sculpture by Ralph Tikerpae was unveiled outside the museum last Friday - the students will work on their sculptures during the first week of May.

The finished series of sculptures will be displayed on the Museum's grounds.

Anyone wishing to donate material can contact the museum for further information.

The group is particularly interested in the scrap metal that farmers have cluttering up their properties, as it is these unusual bits and pieces which lends itself to creative transformation!

If you would like to have a clean up, or even better have someone else come and remove the clutter for you, please assist us by phoning the museum on 63441040.

Canowindra News, 21 April 1999

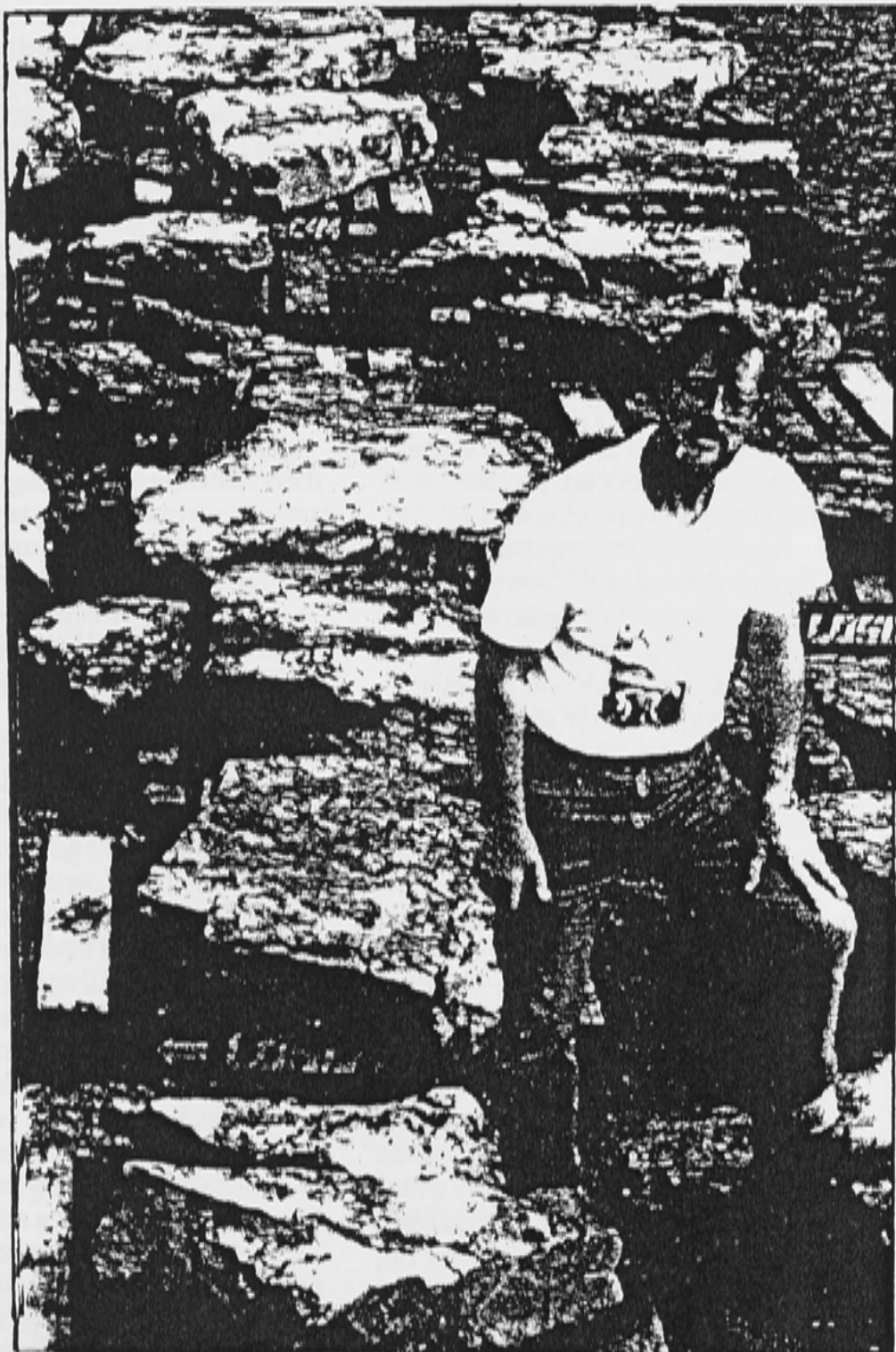
WEDNESDAY MAY 22, 1996

CANOWINDRA NEWS

128th year of publication

Phone (063) 42 1044. Fax (063) 41 1965. PO Box 126, Cowra NSW 2794 80c

Councils back Age of Fishes



Alex Ritchie with some of the hundreds of fish fossils unearthed in Canowindra. The Age of Fishes committee received a huge boost this week with the announcement of funds donated by Cowra Shire Council and Parkes Shire Council.

Cabonne Council mayor, John Farr, is thrilled with the response by both Cowra and Parkes Shire Councils to his appeal to surrounding Councils to sponsor the Age of Fishes Museum Project at Canowindra.

"Both councils have put their money behind this project, pledging a generous sponsorship, Cowra providing \$50,000 over five years and Parkes \$10,000 over four years bringing a total of \$60,000 to the project," Cr Farr said.

"The Age of Fishes Museum committee stated they were ecstatic at the recent news of the \$25,000 grant from the Ministry of Arts which will enable the purchase of the State Rail land at Canowindra, on which the museum is to be built.

"With Cabonne's contribution of \$60,000 approved at the Draft Budget meeting last week, this brings the total pledged in the last 10 days to \$145,000.

"On top of this Cabonne has agreed in principle to guarantee a \$250,000 loan for the museum," Cr Farr added.

According to Cr Farr the news of the grants will electrify the community.

"This is surely the regional cooperation that the State Government is promoting and these Councils are leading the way.

"The Age of Fishes Project, together with the Inland Marketing Corporation and the proposed Cardia Gold Mine should result in upwards of 2000 jobs in the region in the new future.

"Effectively, what Cowra and Parkes have done in pledging these funds to the fossil find, is shown in a tangible way that they believe in the potential of this project and that they are prepared to back in financially, with the knowledge that this will bear fruit for the region."

Cr Farr went on to say that armed with these pledges and other which he was hopeful of receiving from other neighbouring Councils, he would be continuing with his approaches for sponsorship, his next target being the corporate sector.

Cowra Shire Council agreed to the \$50,000 grant over five years despite overlooking it in preparing its budget for the next 12 months.

Council general manager Neville Armstrong recommended to Cowra Shire Council that this oversight be redressed and that the council take up Gold Sponsorship.

The recommendation receiving overwhelming support from the Cowra Shire Councillors.

Cowra Mayor Bruce Miller said he fully supported the museum, adding that it is a bonus to an already growing tourist industry.

"This is a world class attraction, there is no doubt about it," Cr Miller said.

Councillor Rod Blume was also vocal in his support of the museum.

"This sum might seem a lot to be spending outside the shire, but we should bear in mind that the museum will be located just outside of our border," Cr Blume said.

"We stand to reap as much out of this as Canowindra, in fact if it was on the Cowra side of the Belubula we would have no hesitation in putting forward this amount of money and probably a lot more," Cr Blume added.

Ancient fossil finds which have rewritten Australia's prehistory are now being lost to neglect, writes James Woodford.

IN THE scrub country north of Mt Isa the heat makes you feel your body is melting like wax and your lungs are filled with curry powder not dust. Spinifex needles drive themselves into uncovered shins and moving around is a logistical nightmare. Yet this low-lying stretch of the Gulf of Carpentaria is home to Australia's richest and most important fossil site.

The physical demands would be challenge enough, but the emotional landscape is just as confronting for the scientist who brought the site to international attention, the University of NSW's Professor Michael Archer. Archer, who is also director of the Australian Museum, faces political, financial, administrative and cultural problems that now appear insurmountable.

Not least is that Archer and his team are making key discoveries about the evolution of Australia's fauna in a region where creationism is a powerful force.

Christian fundamentalism heavily influences both the Aboriginal elders and white pastoral families with whom Archer must work to do his research. In "nearby" Mount Isa, a four-hour drive south, it is hard to turn on a television without encountering a steady stream of serious God bothering.

Archer's 25 years of backbreaking work has brought confrontations with gun-wielding station owners – the very people on whom he must depend for access to the fossil sites – and ringers who have actively intimidated his palaeontological colleagues, on one occasion by munching the heads off live yabbies.

As well, he faces a continuing shortfall in research funds, a lack of storage for Riversleigh's riches and an uphill battle manoeuvring through three layers of government.

"There are many problems related to the Riversleigh World Heritage Area. Some are specific to Riversleigh; others are more generally related to human nature," Archer's University of NSW colleague, Henk Godthelp, remarked pointedly to the University of NSW's World Heritage Fossil Site Conference, an international gathering of fossil experts in Mt Isa a little over a week ago.

Riversleigh's rocks contain the best record of the animals that have lived in Australia from 25 million years ago to today. Palaeontologists working there can trace how Australia's marsupials evolved; Riversleigh is steadily reveal-

ing the strange origins of marsupial moles, koalas, kangaroos and wombats.

But in what would be a major blow for Australian prehistory, Godthelp and Archer are considering suspending their fieldwork. They are disillusioned that six years after the site was inscribed on the World Heritage list it is still far behind Australia's 13 other World Heritage sites in terms of management. "It's the only mainland World Heritage site in Australia that has no infrastructure . . .," Archer says.

Visitors arriving from Mt Isa, which now markets itself as a gateway to Riversleigh, get no warning that they are in a place of global significance. No signs announce that collecting the fossils is punishable by up to seven years' jail.

It would be a miracle if they were to encounter a ranger in the World Heritage precinct because none is permanently located there. Accommodation arrangements change from year to year because the tourist operators have no guaranteed tenure from the cattle company which controls the site, Lawn Hill and Riversleigh Pastoral Holdings. (The company is owned 49 per cent by the local Waanyi Aboriginal community, with the rest held by the miner Pasminco.)

In the past fat-walleted tourists have found themselves in extremely uncomfortable and embarrassing situ-

ations with workers from nearby cattle stations, who drop into camps drunk and threatening.

THE first significant fossil locality worked at Riversleigh is known to palaeontologists as the "D site". Three waves of scientists have dug there – the first at the turn of the last century, when fossils were first found, the second in the 1960s, the third began in 1976 when a young postgraduate, Dr Mike Archer, arrived. Not long after he began digging, Archer realised that Riversleigh's rocks could sustain an army of palaeontologists. Since then over 300 fossil sites have been found, all at least as rich as the D-site.

When fossils are taken out of the area they are labelled and remain the property of the Queensland Museum. So far 32,000 labels have been attached to rocks. But this is misleading because one rock may contain many hundreds of fossils. The number may sound huge but, say palaeontologists, there is at least another 50 million cubic metres of fossil-bearing rock at Riversleigh. All that has been discovered in the last quarter century has been gleaned from less than 20 cubic metres of unprocessed stone each year.

The D-site is about 50 metres off the main dirt track through the area and,

Bone fossils, top found at the Riversleigh World Heritage Area and scientist Michael Archer (above) who has brought the site to international attention. Photos by Brendan Esposito



We would like to see it [the site] protected. We want to see the fossils back there on the land from where they came.

Eunice O'Keefe
Waanyi elder

Continued...

though Archer's team has finished collecting there, it still bristles with fossils. The drumsticks of giant thunderbirds, like mattock handles in shape and size, remain embedded in rocks 25 million years after the birds died.

One thunderbird has been so well preserved that its gizzard stones (used to help it digest) are clearly visible.

But it is their very visibility that makes Riversleigh's fossils so tempting to collectors and tourists. Illegal fossicking is rife at D-site and on a number of occasions sites have been vandalised. All three levels of government know this, as do scientists, tourist operators and locals.

The weekend before last, Archer showed the thunderbird with gizzard stones to palaeontologists from around the world who travelled to Riversleigh after their meeting at Mt Isa, and asked rhetorically: "How long before somebody takes a swing at it? It's a time bomb - we are just waiting for someone to damage it."

Another concern is that fossils have been moved from one location to another contaminating the second site.

Along with the visiting palaeontologists who toured the site were elders from the Waanyi.

The palaeontologists must have the permission of the Lawn Hill and Riversleigh Pastoral company to get to the World Heritage Area and to camp on the company's land. But at times, for reasons Archer was unable to understand, the scientists have found themselves locked out.

When the Riversleigh stakeholders and the international scientists were together at Mt Isa, some of the Aboriginal representatives voiced concerns about their negotiations with the scientists; some were not happy about blasting that breaks up the rocks containing fossils and they complained that they did not have control over the material collected.

A Waanyi elder, Eunice O'Keefe, said Riversleigh was the most important place for her people. The Waanyi do acknowledge, however, that before the work of Archer and his team, the fossils were not considered culturally important. Some claim the Waanyi did not even know of the fossils until 1976.

"We would like to see it [the site] protected," O'Keefe said. "We want to see the fossils back there on the land from where they came."

But Archer told the gathering that senior elders had been consulted over many years and that he was certainly prepared to continue discussing his plans with any of the Waanyi.

Archer does support proposals for a fossil "keeping place" at Riversleigh but

warns that it would have to be especially secure because of the location's vulnerability to cyclones and its remoteness. Any decision on the storage of the fossils would need to be made by the Queensland Museum.

Tourist operators, who generally have a good working and personal relationship with Archer and his colleagues, would also like to see infrastructure developed at Riversleigh.

Lloyd Campbell's company, Campbell's Tours and Travel, has operated alongside the scientists for almost as long as Archer has been digging. "World Heritage right here in your backyard . . . means dollars for everybody," Campbell declared at the conference. Others at the meeting suggested that Campbell had omitted a "should".

"But as a tourist operator I don't know if I am going to be there next year," Campbell told the Mt Isa meeting. He was referring to so far inconclusive negotiations with the Waanyi for continuing access to the land - he expects a decision in a few weeks.

If Campbell is not back next year, then the last line of defence for the fossils will be gone because it is his staff, based at the camp on the Gregory River, which has unofficially taken on the task of attempting to keep the fossickers honest. Recently one of Campbell's employees encountered a group at the D-site with an armful of fossil-bearing rocks and told them they were breaking the law. The fossickers reportedly said: "Where are the signs telling us that?"

At Riversleigh, the past and the present are constantly colliding, and will continue to - people can't be shut out. Aborigines, scientists, pastoralists, tourists and bureaucrats, who all have an important stake in Riversleigh, equally have an obligation to sort out their differences and to ensure that a balance is found between the competing interests of all the stakeholders.

On the Saturday night after a blisteringly hot day, an Aboriginal elder returned to camp at Riversleigh with four turtles from the Gregory River. Their throats were cut and then they were singed on the coals of an open fire before being wrapped in foil and roasted. Soon after the turtles had been eaten there was a final discussion and then the international scientists were asked to summarise their impressions of Riversleigh. Their appraisal was blunt: "There's a lot of work ahead for Riversleigh," said a spokeswoman for the group.

By the next morning, both Godthelp and Archer were wondering out loud whether they had the energy to be involved in that daunting effort.